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ABSTRACT

The purpose of the study was to examine California's needs in the broad field of environmental design and urban studies. Chapter 1 discusses the purposes, methods, and sources of the study. Chapter 2 deals with the Environmental Design Professions which include: architecture, landscape architecture, city planning, and their educational systems. Chapter 3 discusses factors affecting growth, and how projected growth rates and proposed programs fit future needs. The variables considered are: the demographic base; educational trends; the economic base; professional credentials; and social priorities. Existing programs in California's 4-year institutions are examined in Chapter 4; community college programs in Chapter 5; and projected and proposed programs in Chapter 6. Chapter 7 discusses the estimated needs of the environmental design professions; and Chapter 8 reports the findings and makes recommendations. The questionnaires from which data were gathered are included in the appendix. (AF)

ED041556

California Education in Environmental Design and Urban Studies

A Report Prepared for the
Coordinating Council for Higher Education
by Lawrence B. Anderson, Dean of the School of Architecture
and Planning, Massachusetts Institute of Technology

Council Report 1036

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The Author

Lawrence B. Anderson, author of the report, is Dean of the School of Architecture and Planning of the Massachusetts Institute of Technology. Honored as a Fellow of the American Institute of Architecture and an Associate of the National Academy of Design, Mr. Anderson has served in various teaching and administrative positions at M.I.T. since 1933. He received degrees from the University of Minnesota and M.I.T. Dean Anderson has served as president and vice president of the Association of Collegiate Schools of Architecture and presently is a member of the American Institute of Architects' Committee on Education.

In addition to his activities in higher education, Dean Anderson has been appointed as an advisor in design to a number of agencies, including: the Boston Government Center Commission, the Boston Redevelopment Authority, the Department of State, the Educational Research Center of N.A.S.A. and the University Circle Development Foundation of Cleveland. He also serves as a design consultant for the University of Minnesota and Southern Illinois University. He has been a member or chairman of a number of design competition juries including those for the University Arts Center Competition, University of California at Berkeley and the Golden Gateway in San Francisco.

He is the author of several articles including one entitled "The Environmental Design Umbrella," published recently in the *AIA Journal*.

(no p. 6)

Council Action on the Report

The Coordinating Council for Higher Education received the report, *California Education in Environmental Design and Urban Studies,* prepared by its consultant, Lawrence B. Anderson, at the Council meeting of July 15, 1969, in San Francisco.

Having considered the findings and recommendations contained in the report, the Council adopted the following resolution at its next meeting on October 6, 1969, in Los Angeles:

Council Resolution No. 326

WHEREAS,

The Coordinating Council for Higher Education has received the report of its consultant, Lawrence B. Anderson, entitled "California Education in Environmental Design and Urban Studies," and has considered the findings and recommendations therein, and

WHEREAS,

The Council finds the report to be an excellent review of existing and proposed programs in the four segments of higher education in California, and its general recommendations worthy of consideration; now, therefore, be it

RESOLVED,

That the Coordinating Council for Higher Education adopt the report and transmit the recommendations of its staff to the governing boards of the public and private institutions of higher education in California, to the Governor and Legislature as appropriate.

The recommendations of the Council staff referred to in the above resolution are listed below. They are based on Chapter VIII of Dean Anderson's report, and include certain modifications approved by the Council at its October meeting.

Recommendations of the Council Staff

Recommendation 1

The report points out that planned expansion of existing professional programs in architecture in California higher education will not satisfy the need for growth in environmental design during the coming decade. It further states that environmental design programs, in order to meet professional standards and to permit necessary interprofessional study and research, should extend into the graduate school. The report also cites the University's deliberate and careful planning of new programs, and its concern for research, innovation, and excellence in the field, which limit the number of students which can be accommodated in the University's program proposals. Consequently, the report strongly recommends a new role for the State Colleges in the provision of graduate instruction in environmental design, with such instruction directed toward the first professional degree in architecture.

It is recommended that the Donahoe Act of the *Education Code* and Title V of the *Administrative Code* be amended as necessary to permit the State Colleges to award the master's degree in architecture, provided the degree is considered a first professional degree, and that persons already licensed could not be admitted as degree candidates.

Recommendation 2

The report considers at length the various programs and proposals in the California State Colleges relating to the areas of architecture, landscape architecture, and urban design, and provides a series of recommendations regarding these programs and proposals.

It is recommended that the Board of Trustees of the California State Colleges consider implementing the recommendations contained in the report insofar as possible and in a timely manner.

Recommendation 3

The report concludes that among the campuses of the University of California, the Santa Barbara campus is to be preferred as the location for the next University program in environmental design.

It is recommended that the Board of Trustees of the establishing the University's next program in environmental design at the Santa Barbara campus in the immediate future.

Recommendation 4

The report commends Stanford University for the high quality of its programs in architecture and city planning, but expresses regret for the fact that the enrollments in these quality programs are numerically small.

It is recommended that the Board of Trustees of Stanford University give consideration to committing the resources necessary to expand these programs,

thereby making an important, qualitative contribution to California education in these subject areas.

Recommendation 5

The report cites evident ambiguity in the relation of vocational studies to professional career development programs in the California Community Colleges. It recommends that the troublesome issues posed by this relationship be the subject of a separate study, sponsored by the Coordinating Council and designed to establish principles having sufficient generality to guide curricular innovation for many paraprofessional roles. Further, the report calls for the study to be conducted by a commission involving both educators and professionals, as opposed to a single consultant. *It is recommended* that the Coordinating Council direct its staff to explore the feasibility and desirability of conducting such a study, consulting with the Chancellor of the Community Colleges and his staff as appropriate.

Recommendation 6

It is recommended that the additional advice and recommendations in the report not specifically identified in 1–5 above should be considered as useful advice to respective governing boards in their further development of instructional programs in the segments of California higher education.

CHAPTER I

Purposes, Methods, and Sources

This study was commissioned in 1968 by the Coordinating Council for Higher Educaton of the State of California.

CCHE was established in 1960 by the Donahoe Higher Education Act. It consists of eighteen members: three representing the University of California, three the California State Colleges, three the Independent California Colleges and Universities, three the California Community Colleges, and six the general public.

CCHE is charged with responsibility for advising the Governor, the Legislature, and the governing boards of the appropriate institutions on matters relating to higher education. It comments upon the level of support sought by the University of California and the California State Colleges, advises the State government on the delineation of function among the categories of institutions, and develops plans for the orderly growth of public higher education in the State.

This study was commissioned in response to Resolution No. 235 adopted by CCHE on February 20, 1968, which reads as follows:

Resolution for a Study of the Marine Sciences and Environmental Design and Urban Affairs

WHEREAS,

The Coordinating Council for Higher Education is responsible for the development of plans for orderly growth of higher education and for advising the governing boards as to the need for and location of new facilities and programs; and

WHEREAS,

The Council finds that a review of the academic plans of the University of California and the California State Colleges indicates that expansion in the broad fields of Marine Sciences and Environmental Design and Urban Studies is expected in both segments and additional information indicates interest by the other two segments; now, therefore be it

RESOLVED,

That the Coordinating Council for Higher Education undertakes, with the cooperation of the four segments of higher education in California, the following:

1. A study of statewide educational and research needs in the field of the Marine Sciences, including:
   a. Consideration of marine biology, oceanography and fisheries.
   b. Consideration of all existing and projected facilities and programs in the field of Marine Sciences and their potential.
   c. Coordination and cooperative use of facilities where appropriate.
2. A study of the State's needs in the broad field of Environmental Design and Urban Studies, including:
   a. Consideration of city and/or regional planning, architecture, and landscape architecture.
   b. Consideration of existing programs in this field, their potential and the possible need for new programs; and be it further

RESOLVED,

That these two studies be completed by September 1, 1969; and be it further

RESOLVED,

That the Coordinating Council advise the State Lands Commission to make no allocation of tide or submerged land until completion of this study.

In conducting the study the author has made use of the following sources of information:

The CCHE staff

An Advisory Committee

Questionnaires and institutional publications

Visits, conferences, and correspondence, with institutions

Literature search

The study has been carried out under the immediate advice and supervision of Dr. Willard B. Spalding, Deputy Director of CCHE, who made available the data of that office on the status and projections for higher education in California.

An Advisory Committee was appointed with the following membership:

Advisory Committee on Environmental Design and Urban Studies

Representing the University of California

Robert J. Evans
Acting Vice President
University of California
Berkeley

Harvey S. Perloff
Dean, School of Architecture and Urban Planning
University of California at Los Angeles

Gerald M. McCue
Chairman, Department of Architecture
University of California
Berkeley

Representing the California State Colleges

C. R. Webb, Jr.
Associate Dean, Academic Planning
California State Colleges

George J. Hasslein
Dean, School of Architecture
California State Polytechnic College
San Luis Obispo

Representing the California Community Colleges

Mary E. DeNure
Consultant, Public Service Occupations
Bureau of Junior College Vocational-Technical Education
State Department of Education

Jack W. Mears
President, Cerritos College
Norwalk

Representing the General Public

Joseph L. Johnson
Architect
Los Angeles

Lawrence Livingston
City Planner
San Francisco

Theodore Osmundson
President, American Society of Landscape Architects
San Francisco

Burton Rockwell
President, California Council, American Institute of Architects
San Francisco

George W. Wickstead
Landscape Architect
Los Angeles

Representing the State Architect's Office

Fred Hummel
State Architect
Office of Architecture and Construction
Department of General Services
Sacramento

The Advisory Committee met on October 11, 1968 in San Francisco to consider drafts of questionnaires and other proposed procedures. It met again on March 17, 1969 in Los Angeles to consider preliminary findings and to comment on a first draft of the report.

Two separate questionnaires were designed, one for four-year institutions and another for community colleges. The first was sent to all institutions now having programs in the professional fields associated with environmental design, and proved to be very useful in obtaining basic data on student population and degrees granted, as well as on the general structure and objectives of the various programs. It provided essential information on the actual enrollments, degrees, and faculty during the period 1957–67, and also the institutional projections for these programs for the forthcoming decade ending in 1978. The second provided information on the curricula, objectives, enrollment, and staffing of the two-year programs (see Appendix).

In two respects the returns of the questionnaire were disappointing. Information about the budgets of the concerned departments only proved that procedures are not uniform and that no certain comparisons can currently be made between the costs of the different programs. Information was also requested concerning scholarship support. In terms of average dollars per student enrolled, it is clear that even graduate studies in the environmental design professions are very poorly supported either by scholarships or by teaching or research assistantships. With the possible exception of city and regional planning at Berkeley, the outlook for any support beyond the provision of free or nearly free tuition at public institutions is uniformly dismal. This is a well-known national weakness of the field, and no effort has been made in this report to make of it an important issue. It should be noted, however, as an influence that biases recruitment toward the upper middle class.

The author was able to visit ten campuses in California, and at seven of these to discuss *in situ* the local educational prospects with the persons responsible for the programs. Additional exchanges occurred by mail.

There is in the public domain a substantial literature on the California environment, on higher education, and on environmental design. The titles that have been most helpful in the conduct of this study are included in the bibliography.

The viewpoints, the findings, and the recommendations in this study are solely those of the author, and do not necessarily coincide with those that would be voiced by any of the persons who have made essential contributions.

CHAPTER II

The Environmental Design Professions and Their Educational Systems

In 1959 the University of California at Berkeley established its College of Environmental Design under the deanship of William W. Wurster. Three specialized professional studies—architecture, landscape architecture, and city planning—each of which already had a substantial but separate history on the campus, were thereby combined in one administrative unit. (There is also a Department of Design, whose professional identity is less precisely environmental.)

By this move the University imposed a new name on a familiar educational pattern; these three allied professions are frequently clustered together. For example, the University of California at Los Angeles has a new School of Architecture and Urban Planning. California State Polytechnic College at San Luis Obispo seeks to add landscape architecture and city planning to its existing program in architecture. California State Polytechnic College at Pomona wishes to add architecture and city planning to its existing program in landscape architecture.

This organizational grouping is effective, though it is not the only workable one. The three professions have much in common; they reinforce each other and together address a wider view. They also differ quite markedly; each has external affinities that are not fully shared by the others.

Architecture overlaps broadly with several branches of engineering, especially with the kind of structural engineering practiced by civil engineers. Architecture and landscape architecture are among the visual arts; their most admired practitioners enjoy recognition as creative artists along with painters, sculptors, and other designers. As now developed, planning is much less directly concerned with design as a visual experience, although it is desirable that planners be at least informed patrons of environmental art. While some planners practice design, most are wrapped up in social and economic issues, and in the elucidation of public policy for ensuring social and economic health, including but not limited to the spatial distribution of populations, land uses, and constructed environments. Thus city planning could just as logically be grouped with social sciences and public administration as with architecture and landscape design. Each of the environmental design professions is disposed strongly toward the conservation of natural resources, but it is the landscape architects who have the closest ties to agriculture, forestry, wildlife management, and related fields.

It must be appreciated, therefore, that it would be a mistake to consider environmental design to be an inviolable, tight cluster of three professions. It is only a somewhat arbitrary grouping extracted from a complicated network of arts, sciences, disciplines, and professions; the reader had best keep the complexity in mind and avoid single-solution images.

Each of the three professions has its individual history, tradition, and status. This survey cannot extend itself very far into these; they are in fact well documented elsewhere, especially in some of the titles shown in the bibliography (6, 7, 8, 9, 12, 13, 16, 20, 27). Nevertheless a short sketch of each may be useful to set the stage for the discussion of educational development and prospects.

Architects are fortunate in that the qualities they seek are clearly congruent with the meaning embodied in the single word architecture, a word that has been with us long enough to have unmistakable acceptance. But although architecture is one of civilization's earliest, most durable, and omnipresent manifestations, its practice has developed in ways that could not have been foreseen in earlier times. During the medieval period it took on the character of a highly developed craft. The Renaissance plucked the architect away from the builders and made him an artist (often also engineer). At that time the boundaries between architecture, painting, and sculpture were so loose that the most creative individuals freely crossed them and operated with distinction in several modes at once. Successful artists were given great public responsibility and were placed close to the seats of power and patronage; this prestige still forms part of the mystique of architecture, more so in Western Europe than in the United States. The Industrial Revolution so amplified the technological base of the architect's activity that, in common with other knowledge-based pursuits, its practice gradually developed into a profession. There was need to codify a framework best suited to develop that profession's body of knowledge and the effectiveness of its applications.

This framework was established during the early days of professional self awareness. When in 1834 the Royal Institute of British Architects (RIBA) was organized, its members were to be:

> . . . architects of prominent position and unimpeachable character, educated for and following their profession, and free from those conflicting relations with trade which in the early part of

> this century did exist in some instances, and prevented that implicit confidence on the part of the public which should enable a client to regard his architect not only as his agent, but as his friend and adviser. (6)

Thus in the face of growing industrialization of the construction trades, architects chose to remain aloof from direct involvement in the building industry, and to cultivate the status of individual consultants to clients. The one hundred years following the formulation of RIBA's definition were to be in a sense the heyday of the architect as "friend and adviser."

Then the increasing technological complexity, the organizational problems of new scales of operation, and the population and knowledge explosions, began to overtake the independent practitioner, and to overtax his mastery of his own field. The areas of expertise which he had set out as his province proved to be insufficient to deal with the man-made physical environment as a total system.

It is inevitable that environmental problems must be approached more and more in this larger context. Architects, therefore, must learn to add new definitions of their role. They must generate new specializations and cultivate interprofessional collaboration. While it is to be hoped that an open society will retain its appreciation of and rewards for individual creative acts of great merit, in architecture as in other arts, the architect as a professional will find himself operating in an increasingly elaborate information and control system concerned with environmental problems, and he will not inevitably be the leader in that wider domain.

The individual building is ceasing to be the characteristic unit by which the environment is developed. The new scales of operation are so large as to require the institutionalization of professional service to a degree that brings serious hazards. The resulting agencies are unwieldy and tend to develop solutions. that are more influenced by the capability that has been developed than by the conditions of the problem presented. In short, architecture is now both a profession and a business, with problems of promotion, production, and distribution. Viewed from this perspective, the ideals and standards promulgated in the nineteenth century are beginning to seem romantic, or even quaint.

Despite the turmoil and the stress of adapting to new cultural conditions, the profession of architecture when regarded statistically has so far retained a very stable position. Data to substantiate this statement appears elsewhere in this survey. We shall also see that enrollment in architecture programs, though slipping slightly as a percentage of total enrollment, as indicated in a 1967 report (23), is nevertheless increasing at a faster rate than the number of practitioners or the population as a whole, forecasting intensified impact.

After 100 years of development the profession of architecture in the United States reached in 1910 a numerical level relative to population that it has never since exceeded. In that year most architects were either self taught or had studied in Europe, notably at the Ecole des Beaux-Arts in Paris. But thereafter American architectural education began gradually to become the principal contributor to the roster of practitioners, and today any other preparation is considered exceptional.

Whereas European architecture schools were independent academies or parts of "technical high schools," the American innovation was to lodge them in the universities, thus exposing them to a broad range of influences and generating curricula in which general and professional education could be merged in some proportion. The fact that the schools were not controlled directly by the profession but were elements of wider educational enterprises, made them develop in different ways according to local circumstances. This diversity is thought by most architects to be advantageous in that it provides the elements of choice, flexibility, and innovation. On the other hand it also generates some confusion and misinformation as to what the graduates of different schools are actually equipped to do.

Certain common structural features did nevertheless appear. Private universities, located mainly in the East (Harvard, Yale, Princeton, Columbia, Pennsylvania) early adopted the graduate school model for their professional schools, while state universities began initially with undergraduate curricula of four years duration. By common consent (and accreditation pressure) public undergraduate programs were lengthened to five years about 1930 in order, it was said, to allow concurrent time for a better general education, and this remained the prevailing mode until the recent past.

At the present time there is in public institutions a pronounced shift toward six-year programs, the first four years leading to a B.A. or B.S. with some professional concentration, followed by two years of graduate study to earn an accredited professional degree. Some new programs place the entire professional program in the graduate school. Thus the public universities are gradually moving toward the format long since pioneered by the older private institutions. This format will facilitate new interpretations of the content of professional education, and if properly developed will increase the number of entry, transfer, and exit points to allow more individuated experience. The movement to six or more years, though strong, is

far from complete, and it may be many years before it becomes the prevailing mode. In the meantime there is lack of uniformity in nomenclature. B.Arch. may mark completion of either a five-year or a six-year or longer program, and may or may not be a second baccalaureate degree. M.Arch. may designate completion of a six-year program, or it may be an advanced degree resulting from studies one or more years beyond the B.Arch. Ph.D. programs in architecture are as yet insignificant statistically. Ultimately the system most conforming to general academic practice will prevail, *viz.* bachelor's degree, preprofessional; master's degree, professionally qualifying; doctoral degree for studies beyond professional qualification.

The common society uniting schools of architecture is the Association of Collegiate Schools of Architecture (ACSA), but the accreditation function is delegated to the National Architectural Accrediting Board (NAAB), whose membership bridges the ACSA, the AIA (American Institute of Architects) and the NCARB (National Council of Architectural Registration Boards). At present, sixty-three schools are accredited, most of them on a five-year basis. In 1966 the ACSA membership was eighty-four schools, including three Canadian, fifteen unaccredited, and two new schools. The average enrollment per school is about 300, and the range is from under 50 to well over 1,000 (at CS Poly SLO).

Most of what has been said about architecture is applicable to landscape architecture, which can be regarded as a comparable profession in most ways except that of numbers. The national population of practicing architects is about 30,000, that of landscape architects is only about 7,000. Such a group is too small to appear separately in generalized statistical data and indeed the profession itself has difficulty in maintaining statistical records. Licensing is mandatory in some states but not in others. As an art form landscape design has flourished greatly in some cultures, widely dispersed in time and place. American formulation of the profession of landscape architecture was dominated throughout the last half of the nineteenth century by the towering figure of Olmsted, who pioneered development of our municipal park systems and led the profession and the public to consider the need for public action to conserve natural resources as park lands.

One might ask how and why this relatively tiny profession now has such a clear identity, whereas other allied activities, such as interior design, are much less sharply delineated. Two reasons stand out: (1) professional services are often provided independently of any building development, and (2) the materials and technology of landscape architecture have only a moderate overlap with the materials and technology used in making buildings.

Although conspicuous exceptions occur, proportionally less public and private wealth is invested today in the design of gardens than was the case in other periods of history. On the other hand, there is growing empathy for the natural ecology and belief in the need to support and enhance it as a counterpoise to the environments that are composed entirely of man-made elements. One sees this in the popularity of suburban living and in the way people exploit their increased mobility by searching out the experience of wilderness and near-wilderness in their spare time. Enhancement of natural sites for recreational use plus management of the impact of industry and transportation on the landscape are the expanding areas of concern of the profession. While maintaining their interest in design, landscape architects can now expect to become involved in any issues of public policy that impinge on the quality of the outdoor environment.

In landscape architecture the degree arrangments are generally similar to those in architecture; undergraduate enrollment in the nation's schools is about six times that of graduate enrollment. The national agency is the Committee on Education of the American Society of Landscape Architects (ASLA), to which the schools look for accreditation. There are now twenty accredited and provisionally accredited schools of landscape architecture, with an average enrollment of about 115. The smallest has 31 students, the largest 228 (CS Poly Pomona).

The profession of city (regional, urban) planning is younger, more dynamic, and still very much in the process of finding its identity. The more or less deliberate plannning of cities is not something new, but the identification of a professional knowledge base for this activity has come much later than for architects and landscape architects. It happened only when the city planning function was incorporated in the structure of urban government. One can see the beginnings of this early in the twentieth century and its rapid acceleration since the 1930's. In 1967 California alone had 441 municipal, county, metropolitan, and State agencies offering employment for planners. The fact that most planners were to find their employment in government service marked the first major difference between planning and the design professions from which planning sprang.

At first there was belief in the need for a kind of design profession similar to architecture and landscape architecture, but with its own vocabulary and techniques, simply extended in scale so as to deal with city-wide elements of the macro-environment. It seemed natural that it should develop as an offshoot of architecture, a specialization built on the architec-

tural design base. The then prevailing Garden City * thinking did not call for a very large number of city planners. Gradually the concept developed of small staffs in large cities performing rather clearly defined professional tasks that would guide municipal policy in zoning and new development, plus a few consulting firms who could provide the skills needed for ad hoc investigations, recommendations, and designs for new systems.

This peaceable development was rudely upset by the appalling compounding of problems associated with the latest phases of urbanization, not only in the United States and other highly industrialized countries, but throughout the world. These problems are inextricably tied to the spatial configuration of populations and the physical facilities that make their environments, but they are far deeper than physical systems and are not uniformly solvable through the techniques of physical development.

The initial template had called for planners to become familiar with the subject matter and techniques of the social sciences, geography, architecture, law and public administration, civil engineering, and transportation, and, with the aid of this knowledge, to synthesize correct and workable solutions for land use and development. Not only is such familiarity now beyond the grasp of any one person, but also wisdom to solve problems is insufficient, because not enough is yet known about the dynamics of modern urban life.

Exploding urbanization and our failure so far to cope constructively with it have not only greatly accelerated recruitment to the field of urban planning, but have also broadened its base. Instead of a unitary profession composed of experts all engaged in one definable set of activities, it is tending today toward a loose federation of disciplines united only by a complete involvement in the urban problem. There remains, however, a distinction between the man who identifies himself as a professional planner and a host of other experts who might be urban economists, urban sociologists, urban political scientists, urban architectural designers, urban engineers for systems of transportation, supply, disposal, and the like. The distinction may or may not endure, but it rests on two assumptions: (1) the planner makes a definite effort, whatever his specialty, to have a true overview of the interlinkage of all urban problems, and (2) for the planner this overview takes priority over the disciplines or methodology which might be applicable, as in economics or management, to a range of problems not always urban in context.

* Term introduced by Sir Ebenezer Howard in 1902 to designate an ideal community of predetermined area and population, surrounded by a permanent rural zone, as an alternative to the massing of population in metropolitan centers.

The day-by-day problems of urban change are overwhelming, but planners must strive toward longer perspectives. No longer must the planner choose between joining a municipal planning agency and a private consulting enterprise. It is true that in these traditional jobs there is today a tremendous unfulfilled demand for personnel, especially in California, and it will be many years before some kind of steady state can be established. Meanwhile there are additional challenges. Recognizing the need for generating intellectual capital, the federal government and private foundations are systematically augmenting support for research on urban affairs. The professional schools are expanding so rapidly that they have an intense problem in faculty recruitment. There are many policy areas in federal, state, and regional government, as well as in the private sector, where professionally trained planners could make important contributions, if there were enough to go around.

Even broader are the needs for personnel who, though not necessarily educated as professional planners, would have an educational background in some combination of urban studies that would give basic equipment for many tasks of municipal administration and services, private land development, and other activities in the urban context. Such generalized urban studies would also provide academic underlayment for graduate specialization in various fields.

Education in city planning developed later than that in either architecture or landscape architecture and in a somewhat different pattern. Initially its curricula recruited, almost exclusively, students who had already completed other professional studies and who wished to study planning as a more specialized way of applying the previous discipline. Thus it was that planning programs from the outset were predominantly graduate curricula. Moreover, possibilities for scholarly research are obviously greater in planning than in the more design-oriented professions; consequently this field has a good start on doctoral studies. The establishment of institutes and centers for research in urban problems has been an important component in the growth of doctoral programs. The national fulltime enrollment in planning consists of 22% undergraduates, 72% master's candidates, and 6% Ph.D. candidates. There is no formal accreditation of planning curricula (nor is there licensing, except in New Jersey). However, the American Institute of Planners (AIP) recommends standards for "recognition" that may be tantamount to accreditation, and the American Society of Planning Officials (ASPO) conducts annual surveys that provide a statistical record of educational development. Forty-four U.S. schools were included in the 1967 Survey (28), some of them very small and only one (University of Pennsylvania) as large as the program

at the University of California at Berkeley. The Survey also notes five undergraduate and six graduate programs in allied fields not recognized as professional planning.

The extent to which professional schools in these three fields are clustered is an index of their interdependence. Of twenty schools of landscape architecture, thirteen are at institutions where there is also a school of architecture. Of forty-four schools of city planning, thirty-two are at such institutions, and two are at institutions where there is landscape architecture but not architecture, leaving ten that are independent of architectural ties. Twelve institutions have programs in all three professions.

A recent research report sponsored by the AIA (27) proposes that the subject matter of environmental design education be further broadened to include some of the engineering disciplines most closely concerned.* It also recommends that curricula be structured in two-year components, each with a specific set of goals, so that students might combine these in sequences to fit varied kinds of professional emphases, whether all at the same institution or at several. Such flexibility is no doubt desirable, and may well be achieved in several ways. It seems certain that present trends are toward such articulation, and away from the long single-track unitary type of curriculum. In 1966 there were available among eighty-seven schools of architecture the following related curricula or options: nineteen programs in architectural or structural engineering, seventeen programs in building science or construction, and ten in interior design. Urban design, a new subarea overlapping architecture and planning, is available as a degree program or "option" at sixteen of these schools.

* Subsequent to the publication of the report, the American Society of Civil Engineers, the Consulting Engineers Council, and the National Society of Professional Engineers have allied with AIA, ASLA, and AIP to form the Interprofessional Commission on Environmental Design. Nevertheless, education in any of the many branches of engineering is always referred to the central engineering trunk, and the history of efforts to hybridize engineering and architecture is not brilliant. It remains to be seen whether the new rubric "environmental design" will rally the engineers' growing involvement in the social, cultural, and aesthetic impacts of technology to the point of curricular fusion of some engineering branches with planning and architecture.

(no p. 16)

CHAPTER III

Factors Affecting Growth

One of the purposes of this survey is to propose yardsticks by which the adequacy of California's educational programs in architecture, landscape architecture, city planning, and urban studies may be measured. We shall need to provide answers to the following questions: How well have the existing programs met the State's needs in the recent past? What will the needs be in the foreseeable future? How well do projected growth rates and proposed programs fit future needs? How many students are likely to enroll in degree programs in environmental design?

First we must define a frame of reference in terms of time. There are allusions in this study to developments over the last hundred years or even earlier. However, for analytical purposes the last decade provides us with most of the data needed for understanding the dynamics of the present system. Although no period these days can be regarded as stable, the last ten years were free of major perturbations such as the two world wars and the economic depression between them. These had been events that significantly interrupted the development of higher education.

For estimation of future needs it seems appropriate to consider the forthcoming decade as "foreseeable," since it is far more quantifiable than conditions lying more than ten years ahead. When we see the dimensions of 1968–78 we may wish to make assumptions about the further continuation of trends therein established, but these will have to be adjusted by fresh assessments as time goes on.

The analysis requires consideration of a number of complex variables in demographic, economic, professional, educational, and cultural areas. They can be described under a number of headings, although their quantification is difficult.

Demographic Base

Population growth is the obvious first indicator, and there are two aspects: (1) growth in society's needs for trained professionals, and (2) demand for higher education on the part of young people in the population. For the latter purpose it will be most accurate to look at the numbers in the appropriate age group, which is 18–24.

California's population growth is made up about equally of the excess of births over deaths and in-migration. Since people who will attain college age in the next decade are already countable, the first influence can be quite accurate, but the rate of in-migration is much less certain. Nevertheless, the California Department of Finance has data on the 18–24 age-group population of California which result from careful study. These are as follows:

1960	1,394,000
1965	1,933,000
1970	2,548,000
1975	2,999,000
1980	3,391,000

Throughout its development California has attracted many different types of in-migrants; in recent years younger and more highly educated groups have responded to growth in military, aviation, and space industries. The present rate of increase in the age group 18–24, although it has reached its peak and will diminish, is about twice that of California as a whole, which is in turn about twice the rate of increase of the entire U.S. population. Ultimately, however, both the birth rate and the in-migration rate will diminish, and growth in education will level off, probably within two or three decades.

Educational Trends

The average number of years of schooling has been rising phenomenally over the years, and an increasing percentage of eighteen-year-olds are demanding college experience and access to the kinds of jobs and standards of living that they expect will follow on higher education. Meanwhile society is evolving in such a way as to require less manpower in the production of goods, which is increasingly mechanized, and more in the arts of management and the professions. This long-term national trend is reflected in the growth in higher education as measured by the enrollment per 100,000 of the college age group.

The U.S. Office of Education notes that in 1958–59, 32.6% of the 18–21 age group were attending bachelor's degree credit programs, and estimates the 1968–69 percentage at 41.9%, 1978–79 at 51%. The data for California institutions also indicate enrollment growth more rapid than growth of the applicable age group. In fact, enrollment in California four-year institutions is presently growing at an annual rate of 7 percent.

It might be a mistake, however, to apply this factor without qualification to the field of environmental design. The enormous growth in higher education might be primarily in new kinds of programs, leaving relatively unaffected the enrollment in older, estab-

lished fields. Yet on examination, both of enrollment and degrees granted, growth in architectural education is lagging only slightly behind institutional growth, and enrollment in landscape architecture and city planning is gaining rapidly, whether one looks at California or at the U.S. as a whole.

Economic Base

Environmental design includes both the replacement of existing and the construction of new environments; the large capital expenditures required have in the past linked these professions very closely to economic activity. This is especially true of architecture and landscape architecture, less true of planning because planners have problems to solve even in the absence of major capital investment. As one looks at the various parts of the world, one might well expect that the number of architects per 100,000 population would bear a proportional relationship to per-capita income, and so it does up to a point. Yet according to Doxiadis (13), the U.S. had, in 1959, 15 architects per 100,000, while Norway had 30, the U.K. 37, and Denmark 45, in spite of the fact that per-capita income in those countries was only about $1,000 as against more than $2,000 for the U.S. Perhaps we do not regard the quality of the environment with as much seriousness. Perhaps we do not employ this type of professional over as wide a range of tasks. Perhaps American architects are more efficient in coping with actual construction expenditure.

The value of new public and private nonresidential construction as a percentage of the GNP reached 3.9% in 1930 only to drop to 1.0% in 1935. There has been a slow recovery to 3.6% in 1967 (30). In absolute terms the slump was far greater. Major depressions and wars force a reordering of economic activity that is disastrous to the construction industry and deprives the design professions of their economic usefulness. This in turn discourages enrollment in education for these fields. The feedback system is so slow in its response that it will be a decade before a new recruit can become productive. It requires a rather long period of secure growth to make the adjustments in the educational market and to fill the pipeline. There are signs that the last twenty years have been such a period and that the environmental design professions are again growing more rapidly than is the general population.

The profession's monumental self-survey, *The Architect at Mid-Century*, published in 1954, (6), noted the decline from a ratio of 39.7 per 100,000 urban population in 1910 to 26.5 in 1950. The decline is less pronounced if one looks at total population rather than urban population, and this may be more reasonable. There is no proof that environmental design is inapplicable in the nonurban environment. The definition "urban" is in any case an arbitrary one that has changed over time.

Figure 1 shows that the number of architects per 100,000 population have not declined much since the high of 18.2 in 1910, and the last Census decade shows an upturn from 15.6 to 16.8. This is from the "experienced civilian labor force" reported in the U.S. Census, and the number of architects so reported is greater than the number of licensed architects reported by the NCARB. The unlicensed ones are believed to include: interns graduated but not yet licensed; employees who consider themselves architects but are not required and perhaps cannot become licensed; and possibly also landscape architects, whether licensed or not as such. Old data on licensed architects are influenced by the history of the development of licensing by the states. The unlicensed group is proportionately larger in California than in the United States as a whole, but this difference is diminishing, and, except for that group, the trend of all groups is upward as a proportion of total population.

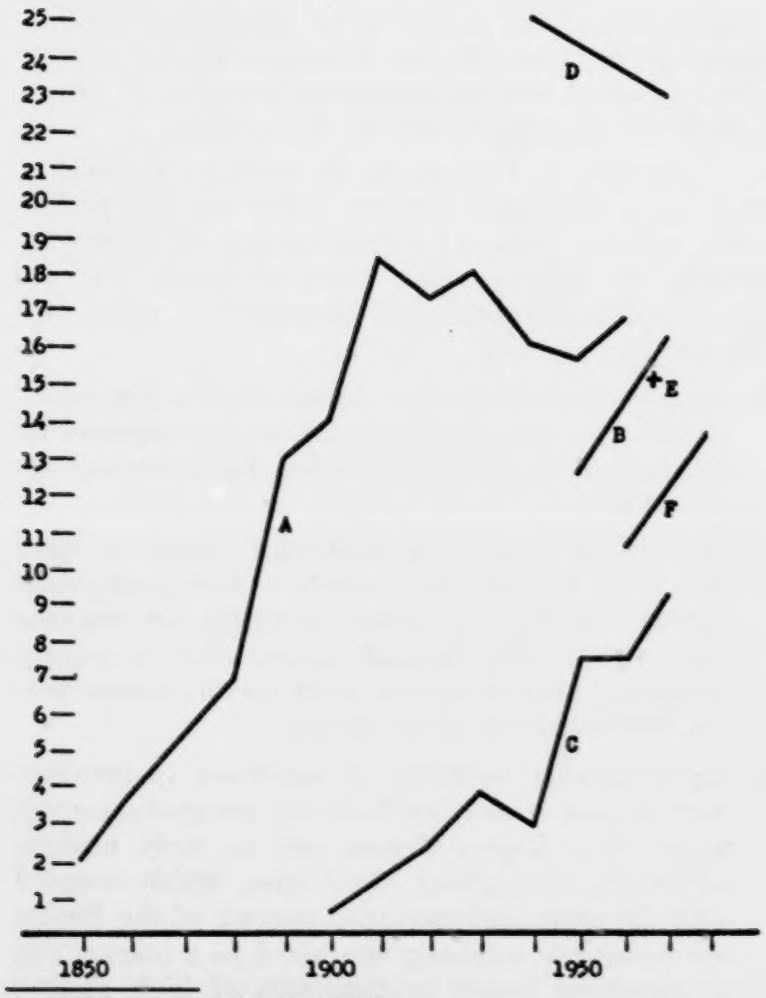
The 1960 Census showed 29,720 "census" architects in the U.S. and today's figure would likely exceed 35,000. Licensed architects in the U.S. now number 32,200 (24).

The California Council of the American Institute of Architects conducted a survey in the State in 1967 (15), disclosing a total of 4,566 architects of whom only approximately 3000 were licensed (landscape architects are not included in either total). Since 1967 California population was approximately 10% of the United States population, it may be deduced that while California has proportionally somewhat fewer licensed architects (9.3% of the U.S. total), the proportion of architects in training (graduated but not yet licensed) seems to be greater although an accurate estimate must await the 1970 Census. This ought indeed to be the case, in view of a faster population growth rate and the fact that California produces somewhat more new construction per capita than do other states. The economic, as well as the meteorological, climate has attracted young professional in-migrants.

So far as landscape architecture and city planning are concerned, practitioners are not identified in the U.S. Census and the absence of total licensing would invalidate a national licensing count. Licensing has been required of landscape architects in California since 1954. In 1968 the total so licensed was 791. An analysis of their backgrounds reveals that the two accredited landscape architecture schools in California provided the educational preparation of less than half of the licensees. The remainder attended other California institutions including community colleges, or institutions in other states or countries. Professional schools through the U.S. have awarded 5,053 de-

Figure 1

Architects and Students per 100,000 Population



A. U.S. Census Architects (6,30)
B U.S. Licensed Architects (24)
C. U S. Architecture Enrollment (7)
D. California Census Architects (6,15,30)
E. California Licensed Architects (15)
F. California Architecture Enrollment (21,26,30)

grees in landscape architecture since 1940; there may be more than 8,000 living degree holders. Estimating 7,000 involved professionals, there would be 3.5 per 100,000, and of these California appears to have about 15 percent.

A definition clearly separating qualified city planners from nonplanners is lacking. Since the AIP has membership eligibility standards, including an examination and certain education and/or experience requirements, its membership may be taken as a minimal census of that profession. In 1967 California had 775 members out of a national total of 4,800, or 16%. Since enrollment in California schools was only 8% of national enrollment, and degrees granted only 5.5%, it is readily seen that here an even larger proportion of practitioners lack degrees from California professional schools.

Professional Credentials

Although it cannot be documented, it may be that the slight decline in the proportion of architects since 1910 is in some measure due to the very efforts the profession has made to improve its performance. These efforts have resulted in the regulatory mechanisms of accreditation and licensing; they have had the effect of lengthening the educational process and making it more expensive, at the same time increasing the wastage along the way that is caused by high rates of dropout. In divorcing accreditation and degree granting from licensure the profession added a further filter to the system. A new recruit to the field has usually found himself embarking on a very special kind of educational track with almost no cross connections to any other outcome, and with numerous invitations to failure and discouragement along the way. Unless he could survive at least ten years of combined schooling and apprenticeship, sustaining his finances, his interest, and his intellectual growth at every step, he had little hope of obtaining the necessary professional credentials.

Among the students who begin the study of architecture, roughly only one in three or four ultimately becomes a licensed professional. No information is available regarding the subsequent careers of the many dropouts.

If the system is wasteful, it is also discriminatory. Since graduate studies in these professions are not well supported by scholarships and research, students are dependent on their parents during five to eight years of higher education. Families lacking economic security cannot provide this. Moreover, low-income families rarely are users of new buildings; architects never have direct professional contacts with them. Thus architecture and, by extension, landscape architecture do not appear as possible careers to a large sector of our population.

The situation in city planning is in some ways less desperate. That profession is not old enough to have created quite such an elaborate set of credentials. The fact that most planners report to "City Hall" does not improve the profession's image as seen by the powerless class, but the implied impact of planning on local environments is visible enough, and some members of disadvantaged groups are being recruited into planning despite the need for credentials. The entire system of professional credentials is due for critical overhaul. On the good side, the system fosters pride and responsibility among elite groups and it offers some protection from incompetence and fraud. On the bad side, it is rigid and constraining in a time when flexibility and innovation are needed; it introduces bias not only into recruitment, but into the profession's capability to serve society. The challenge now is to preserve the gains professionalization has made while greatly extending its social contributions.

Social Priorities

Both the demand for and the supply of young professionals depend heavily on priorities that vary as a reflection of the social climate. These priorities shift rapidly in response to specific events that generate pressures and deflations. The effect of *Sputnik* on education in science is a case in point. More recently we have seen how rapidly the country has become disillusioned with the war in Vietnam, and how profoundly the increasing visibility of racial and poverty problems has reoriented the motivations of large numbers of college students.

Professional groups worry about these shifting priorities in terms of their claims on the public interest; they are anxious not to be at a disadvantage in their leverage on public policy. This is natural enough, but in fact the forces are usually too powerful to be diverted by the activity of specialized groups. One can only rejoice when they coincide with one's own value system.

The public climate is now one of more concern for the quality of life and the environment than at any time in the remembered past, and the concern seems likely to grow and sustain itself. Prominent are two related themes, and each offers expanded opportunities to environmental designers.

The first theme has to do with the physical environment and man's interaction with it. It is triggered by the perception that our country is shifting its character, and that most of us now live and work in a strictly man-made environment. This environment is not only polluted and waste clogged, but disorganized, unstable, and visually unrewarding, especially when viewed as a total system.

The second theme is the human counterpart of the first, a new unwillingness, especially on the part of youth, to accept as inevitable a gross imbalance in the distribution of the benefits of education, employment, housing, and consumer goods; and the recognition that poverty and discrimination are being reinforced by spatial segregation—ghetto *vs.* suburb—so that the physical environment is again at issue.

No one can doubt the rapid emergence of new attitudes on these themes, an effort to shift national (and international) priority to the improvement of human life through environmental change. Many will disagree with any single description of this shift, but they will have to acknowledge as fact that the pace of urban renewal and new urban growth is greatly expanding the demand for professional personnel in environmental design, and the further truth that awareness of urban dislocations stimulates search in the institutions of higher learning for new applications of knowledge to urban environments.

For Californians the environmental crisis is particularly acute in its ecological aspects; any long-term resident has seen the whole landscape change before his eyes. With the intensification of industry and transportation, the maturing of educational institutions, and the consolidation of settlement and population, the social and psychological problems of urbanization will come more into the foreground.

In California, and especially in southern California, there have developed certain conditions for professional activity that are either unique, or which exemplify the most extreme forms of trends that are less conspicuous though still observable in other rapidly growing regions:

1. Leadership in landscape design that is disproportionate both to population and to the response by institutions to expand education for landscape architecture.

   In part, at least, this leadership seems to have developed because the climate favors year-round outdoor activity, and plant materials can enhance this activity only through intervention to supply irrigation, protect against wind, and maximize delicate differences of microclimate.

2. An indigenous tradition of excellence in architectural design emanating from the recognition given to the Bay Region School and to early modern architects of southern California, which coupled with the early and sustained renown of the Berkeley architecture faculty has acted as a magnet for in-migrating young professionals of high ability.

3. Tremendous and largely unfulfilled demand for men with an adequate education in city planning.

   In spite of abundant professional in-migration, there are never enough qualified planners to fill the demands of State, regional county, and municipal government. Many persons have been drawn into planning with inadequate education, and the state is faced with the massive problem of their continuing education. This is generated by the unparalleled rate of urbanization, which not only consumes planning skills during its initiation, but leaves a residue of continuing urban problems in its wake.

4. Group practice with conglomerated patterns of service at unprecedented scales.

   California has far more than its share of mega-consultants, large interprofessional groupings ready to undertake the solution of vast and complex systems. These are given inspiration by the neighboring organizations devoted to systems design for weaponry and space exploration; they are supported by the extraordinary opportunities for large-scale development that characterize the urbanization of California.

CHAPTER IV

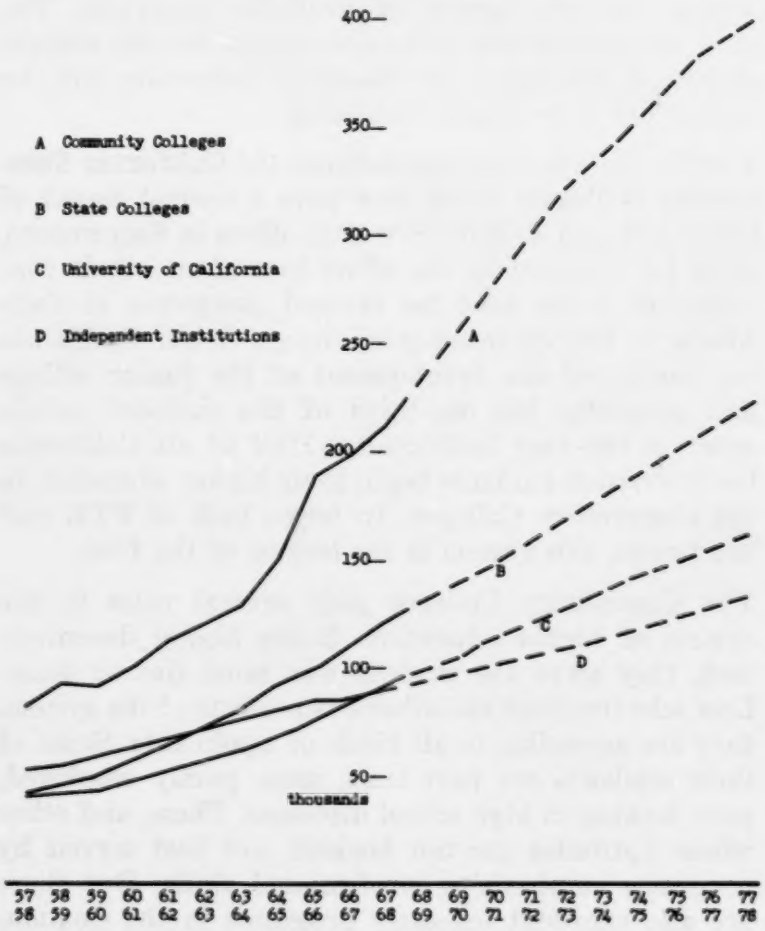
Existing Programs in Four-Year Institutions

Although it will be needless for most California readers, a brief description of the California systems of higher education seems an essential introduction to the discussion of individual programs. Four distinct systems are involved: (1) the University of California; (2) the California State Colleges; (3) the Independent California Colleges and Universities; and (4) the California Community Colleges. The Coordinating Council for Higher Education, established by the Donahoe Higher Education Act of 1960, develops plans for the orderly growth of public higher education. (Figure 2).

The **University of California** is a land-grant institution dating from 1868. The University of California has nine campuses. It has more than doubled its enrollment in the past decade. Total enrollment exceeded 85,000 in 1966–67, currently is about 98,000, and expected to reach 162,000 in 1977. Nearly a third of all students are now graduate students.

Figure 2

Full-time Enrollment in California Institutions Actual and Projected (10)



Two campuses, *Berkeley* and *Los Angeles,* are fully mature in that they have reached their currently planned enrollment maxima of 27,500 students. Although further growth is not planned, their ratio of graduate to undergraduate students is expected to increase.

The campuses at *Davis* (1905) and *Riverside* (1907) were established initially as agricultural schools (north and south). Their enrollments and growth rates are relatively low. The *San Francisco Medical Center* is a specialized institution.

The campus at *San Diego* grew out of marine biological research that became property of University of California in 1912. It became a "general" campus in 1958 and adopted an academic plan calling for twelve colleges of 2,300 to 2,800 students each. In addition to the original Scripps Institution of Oceanography and an administrative campus, Revelle College is in operation and John Muir College and a School of Medicine are under construction.

Santa Barbara also became a general campus in 1958. Presently over 10,000, its rapid growth will bring it to 17,500 by 1975.

Two new campuses were established in 1965, one in the north at *Santa Cruz,* the other in the south at *Irvine.* These are now in the process of rapid development and are each expected to reach a maximum growth comparable to that already achieved at Berkeley and Los Angeles.

The University thus exhibits a range of institutions, from large and mature to new and expansive.

The University admits freshmen under controls that carry out the intention that applicants must be in the top 12.5 percent of their high school classes. An additional 4 percent are admitted as exceptions to this requirement. Students offered admission may be "administratively redirected" to a campus other than their first choice, in order to avoid oversubscription at Berkeley or Los Angeles.

The Donahoe Act conferred on the University certain functions which impinge on this study: The University is the "primary state-supported academic agency for research." It has "exclusive jurisdiction in public higher education over graduate instruction in the professions of medicine, dentistry, veterinary medicine, and architecture," and it has the "sole authority in public higher education to award the doctoral degrees."

The **California State Colleges** are a federation of previously existing and new institutions brought together under a single Board of Trustees by the same Donahoe Act of 1960. There are at present nineteen colleges, with a total enrollment more than twice as large as the University, and expected to reach 300,000 by 1980. About one-third of these students are part-time. Twelve of the nineteen colleges have been established since 1947 and three more are being planned. It is the fastest growing college system in our hemisphere.

The State Colleges are also highly selective; entering freshmen come only from the top one-third of their high school classes, except for a 4 percent exceptional category as with the University.

Ten State Colleges will be considered in this report. None other has, or proposes to have, programs in environmental design. They are the following:

	FTE Enrollment 1968–69	1977–78
Fresno	8,350	12,740
Kellogg-Voorhis (Pomona)	6,150	10,090
Long Beach	14,020	19,420
Los Angeles	11,750	19,100
Sacramento	8,370	15,070
San Diego	15,050	20,000*
San Fernando Valley	11,420	20,000*
San Francisco	11,880	19,030
San Jose	15,740	17,000*
San Luis Obispo	9,000	12,000*

* Enrollment Ceiling.

Most of these colleges are in urban environments, have a varied program in the liberal arts and sciences, in the applied fields, and in the professions, including the teaching profession. The colleges are primarily undergraduate, but offer graduate studies for the master's degree in many fields.

Two colleges in the list require special mention, not only because of their different history and character, but also because of their activity and plans in the environmental design field. These are the two Polytechnic colleges: *Pomona* and *San Luis Obispo.*

San Luis Obispo opened in 1901 as a state vocational high school and by stages raised its level to a two-year technical college, a four-year baccalaureate (1940), and finally to grant the degree, Master of Science. Its largest schools are those of Agriculture and Engineering. The campus has more than 5,000 acres.

The Kellogg campus at Pomona admitted its first students in 1956. For the next ten years it developed as an extension of San Luis Obispo under a common president. For the last three years the two colleges have been administratively separate. Pomona is strong in the applied fields associated with agriculture, engineering, and biological sciences. It is in the process of strengthening its social sciences and its graduate school. Enrollment ceiling of 20,000 FTE is anticipated by 1996–97. The campus contains over 900 acres.

Because of their original orientation, the two Polytechnic colleges have assumed the lion's share of the State College system's commitment to applied technology and especially to agricultural technology. This emphasis will shift in response to increasing urbanization. Unlike the urban colleges, the Polytechnics are more like land-grant institutions. They have ample open space and their constituencies are statewide. They are obliged to provide more residential facilities. Although San Luis Obispo remains predominantly rural, Pomona is now in full suburbia.

Professional education in the California State Colleges is close to the "real" world; research is often community service. By comparison the University is more scholarly, theoretical, and research oriented. Both systems have selective admissions; the best students choose between the two types of education. The systems are complementary; they each serve a different clientele, and there appears to be relatively little communication between them.

The category **Independent California Colleges and Universities** includes the institutions not supported by State taxes. Their academic plans are not subject to State government approval, but must be taken into account in any survey of available programs. The only two institutions that have concern for the subject matter of this report are Stanford University and the University of Southern California.

Finally, the two-year institutions, the **California Community Colleges,** which now have a central Board of Governors and a Chancellor with offices in Sacramento, must be reviewed in the effort to evaluate their contribution to the need for trained manpower in California in the environmental design fields. California has pioneered the development of the junior college and presently has one-third of the national enrollment in two-year institutions. Half of all California lower division students begin their higher education in the Community Colleges. In terms both of FTE and headcount, this system is the largest of the four.

The Community Colleges play several roles in the system of higher education. Being highly decentralized, they serve the student who must live at home. Less selective than the other components of the system, they are accessible to all kinds of applicants. Some of their students are part time, some partly employed, some lacking in high school diplomas. These, and other whose aptitudes are not bookish, are best served by programs emphasizing professional skills. But there are also excellent scholarly programs in the Commu-

nity Colleges, and many successful students at the University and the State Colleges are products of them. Some of these students would not have been eligible as freshmen, but their performance in Community College lower division studies has made them so.

Recruitment from these colleges into professional cadres has two routes: (1) the straight college-preparatory route, leading to transfer to a four-year institution, which has few problems, (2) and the route that identifies potential professional aptitude and motivation through vocational studies in an allied area, which is a more difficult career ladder to professions that require exacting academic credentials.

The fact that the Community College programs are the only ones accessible to all economic, social, and racial groups puts them in a critical position for broadening the recruitment spectrum of the professions.

The Community Colleges are dealt with separately in Chapter V.

The environmental design professions in California have educational programs at a relatively few institutions. Fortunately there is strong representation in all categories of four-year institutions.

A tabulation of the environmental design and urban studies programs at the four-year institutions is found in Table 1. Each institutions's existing programs are subsequently described.

University of California

1. University of California, Berkeley

College of Environmental Design

This is the only California institution having programs in all three professions (plus Design) and one of two using the term "Environmental Design." The Letters and Science Department of Architecture (established 1903) and the School of Architecture (established 1913) were combined to form the College of Architecture in 1953. This became the College of Environmental Design in 1959, with the addition of the Department of Landscape Architecture (established in 1951 as part of the College of Architecture) and the Department of City and Regional Planning (established as an independent department in 1948). The College has recently been housed in a new building; its dimensions reflect policy regarding the optimum size of the College.

a. Department of Architecture. (Figure 3) This department has lived through most of the significant history of architectural education. Until two or three years ago, it conducted the only tax-supported accredited program in architecture in California. For many

Table 1

Programs in Being or in Start-Up Phase

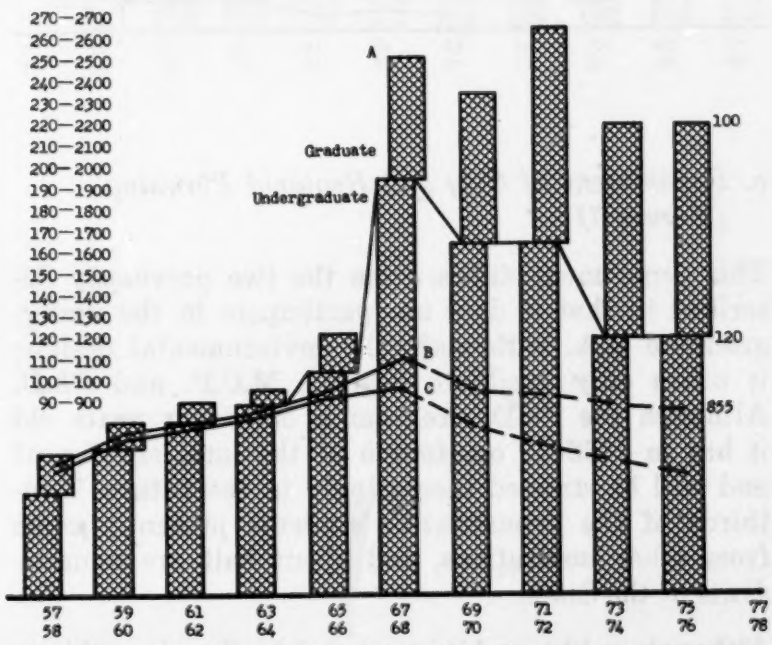
	Architecture	Landscape Arch	City Planning	Urban Studies
UNIV of CALIF				
Berkeley [a]	B.A. M.Arch. [b] Ph.D.	B.A. M.L.A.	M.C.P. Ph.D.	
Los Angeles	M.Arch. [c]			
CAL STATE COLLS				
Fresno SC	----------	----------	M.C.R.P.	
CS Poly Pom	----------	B.S.	B.S.U.P.	
Sacramento SC	----------	B.S.E.R.		
San Diego SC	----------	----------	M.C.P.	
SFSC	----------	----------	----------	B.A.U.S.
CS Poly SLO	B.S.A.E. B.Arch. [d]	----------	B.S.C.R.P.	
INDEPENDENT INSTITUTIONS				
Univ So Cal	B.S. M.Arch [b] M.Bldg.Sci. M.Urban Des.	----------	M.C.P.	
Stanford U	B.A. M.Arch. [b]			

[a] See also, B.A., M.A., in Design
[b] First professional degree
[c] Second professional degree
[d] Five-year program

Figure 3

University of California, Berkeley
Architecture (21)

A Degrees Granted—Degrees Projected
B Graduate Enrollment
C Undergraduate Enrollment



years it was virtually tied with the University of Illinois at Urbana for having the largest school of architecture in the United States. Enrollment reached a total of 1,107 in 1967–68.

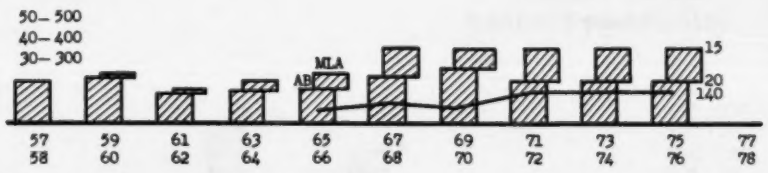
During the early sixties the department produced about 100 new graduates per year but experienced a

sudden rise in output in 1967–68 with 252 degrees granted. The curriculum is in transition to a six-year, two-degree program which may evolve further. For a considerable period of years the department has hoped that pressure toward further growth could be relieved through the establishment of parallel programs at other campuses. The future desired by the department is a total enrollment of not over 900, divided equally between undergraduate and graduate students. It is important to note that when, at Berkeley, the M. Arch. becomes the first professional degree, the annual output of professionally qualified graduates in 1975–76 will be 100, about the same as in 1963–64. A new Ph.D. program is just getting under way.

b. Department of Landscape Architecture. (Figure 4) The degree structure and curricular length are comparable to the Department of Architecture. Although this department is only about one-sixth the size of its larger sister department, it too has no plans for further growth. The output of professionally qualified graduates has been steady at about twenty per year, and when the transition from B.L.A. to M.L.A. as the first professional degree will be complete, the rate will remain substantially at that level.

Figure 4
University of California, Berkeley
Landscape Architecture (21)

Degrees Granted—Degrees Projected
Enrollment



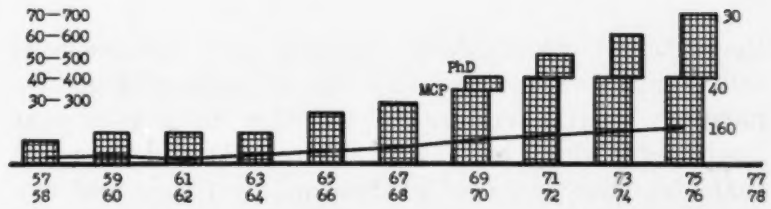
c. Department of City and Regional Planning (Figure 5)

This department differs from the two previously described in that it does not participate in the undergraduate B.A. with major in environmental design; it offers only graduate degrees, M.C.P. and Ph.D. Although the Ph.D. program is only four years old it has in 1968–69 one-fourth of the total enrollment and will be stressed increasingly in the future. Two-thirds of the department's students presently come from other institutions, and about half are nonresidents of the State.

Although unlike architecture and landscape architecture, city and regional planning at Berkeley has not reached the peak of its desired growth. In 1967–68 enrollment was eighty-two, of whom eleven were doctoral candidates. It is expected that enrollment and productivity will double by 1975–76. This is about the maximum growth rate to which resources can be

Figure 5
University of California, Berkeley
City and Regional Planning (21)

Degrees Granted—Degrees Projected
Enrollment



adjusted, and there will then be a ceiling imposed by space and other considerations. Outside pressure for growth is substantial, as the department now denies admission to 80–90 percent of its applicants, more than half of whom are considered well-qualified.

d. Department of Design. In 1964–65 the then Department of Decorative Art became part of the College of Environmental Design and changed its name to Department of Design. Its objectives are peripheral to the professions which are the subject of this study.

2. University of California, Los Angeles

School of Architecture and Urban Planning

This was established in 1965. Twelve degrees (M. Arch.) were granted in 1967–68 from its first two-year graduate program in Urban Design, begun in 1966. The School is in the process of getting its next programs approved by the University Regents. In future years the School intends that the degree M. Arch. embrace four programs: architecture, urban design, history, and management. It hopes to offer the Ph.D. in architecture in 1973. It will also offer two city planning programs, probably beginning in fall 1969: Master of Arts in Planning and Doctor of Philosophy in Planning.

The School intends to build its curricula in response to the sweeping changes it observes in the conditions for architectural practice, particularly in southern California. These changes are generated by the availability of new quantitative methods of problem solving and the unusual regional opportunities to apply them in the resolution of large urbanization schemes. They lead to the formation of larger consulting groups and more highly organized interprofessional collaboration.

Preparation for this new kind of practice is not proposed as a way to meet the total demand for architectural education, but as an opportunity for innovation at the graduate academic level and the infusion of knowledge hitherto missing in architectural education. The first students will continue to be those who have already earned elsewhere a first professional degree in architecture, but within a very few years the courses will have developed to the next

stage, that of admitting students with B.A. or B.S. in a general academic field, and introducing them to a full program of professional studies leading to a professional architecture degree in three or possibly more years. This program, including its doctoral candidates, is intended to reach an enrollment of 200 within ten years.

The graduate programs in city planning will be parallel to those in architecture. In this field a common core program will be shared by students specializing in such areas as regional planning, complex functional systems, and urban social policy. Ultimate enrollment is seen as about 100.

After the inauguration of these graduate programs, the School hopes to turn its attention to the development of an undergraduate program which will not be a narrowly preprofessional one and will not, in fact, shorten the professional student's residence in the graduate school, but rather strengthen his preparation broadly in environmental studies. Students graduating with this B.A. will be able to proceed toward any of a number of environmental studies.

The School is housed in a building which will be adequate for the numbers proposed for the next decade.

California State Colleges

1. Fresno State College

Department of Urban and Regional Planning

A two-year graduate program for the degree Master of City and Regional Planning was initiated in Fall 1968, with seventeen majors enrolled. The program began under sponsorship of the Department of Geography, with the collaboration of the Departments of Economics, Sociology, Art, and Political Science (all in the School of Arts and Sciences), the School of Social Work, the School of Business, and the School of Engineering. Departmental status for the program was accorded as of July 1, 1969.

The new department is making rapid progress toward meeting the AIP recognition criteria. Starting with one fulltime faculty member in 1968, the department will have on its faculty in 1969–70 three fulltime professional planners plus 1.5 part-time faculty, and it expects an enrollment of thirty-five majors. New coursework is being developed within the department to provide fifty-six units in 1969–70, of which thirty-two units, or more than half the total requirement, must be completed for the degree.

While the core curriculum has broad coverage of the substantive areas usually associated with the planning profession, it is intended to place particular stress on the concept that planning problems are often regional in character, spreading across areas neither clearly town nor clearly country, nor dominated by any single metropolitan complex. This concept corresponds to the extensive and populous inner valley systems of California, whose local planning agencies may not be the employment targets of the graduates of other planning schools.

2. California State Polytechnic College (Kellogg-Voorhis), Pomona

Department of Environmental Design (Figure 6)

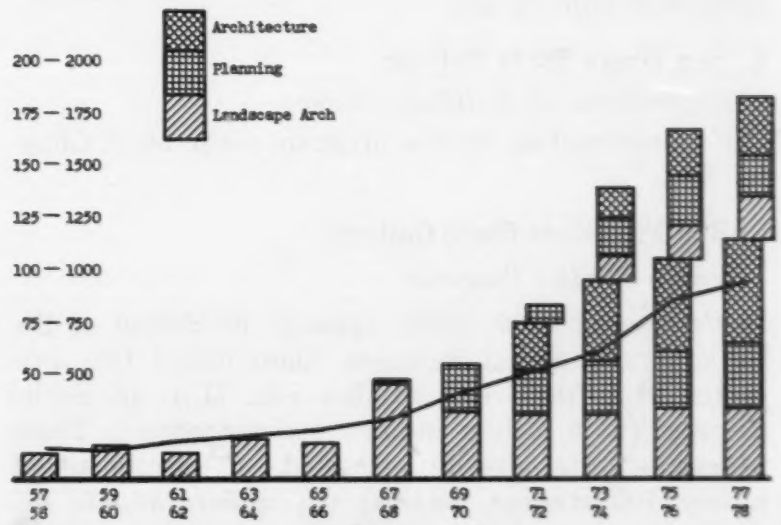
Activity in environmental design at this college began with a program in landscape architecture in 1958, within the School of Agriculture. Initially a Department of Landscape Architecture, the departmental

Figure 6

California State Polytechnic College, Pomona (21)

Degrees Granted—Degrees Projected

Enrollment



name has now been changed as above, a program in Urban Planning and an "option" in Architecture have been introduced, and plans are being prepared for graduate work. All of these undergraduate curricula are four-year programs, and the architecture option has so far only five courses pecular to it.

With a total enrollment (fall 1968) of 366, there were 80 students in the urban planning major and 50 in architecture. The forecast is for rapid growth in both undergraduate and graduate studies in all three areas, reaching a total enrollment of 940 in 1977–78.

The department is already crowded for space. Additional facilities are about to be constructed which will more than double the capacity.

The entire enterprise is very recent; as a landscape architecture school the institution has so far been able to obtain only provisional accreditation by the ASLA. It is the intent of the president of the college that in due course the department will be disassociated from the School of Agriculture and will evolve into

a sixth school. Clearly the future of this school will depend heavily on continued support by the college and on the appointment of a strong leader to replace the recently deceased chairman.

3. Sacramento State College

Environmental Resources Department

This program leads to a B.S. with a major in environmental resources and has been in existence since 1957, although the department was formed only in 1967. Its purpose is to provide instruction for prospective administrators, planners, and technicians in the fields of park management and outdoor recreation.

Although apparently not very design oriented, and therefore peripheral to the present study, the program does include a few courses in the planning and design of parks. Its major role may be to educate staff for agencies of State government, for which its location is appropriate.

4. San Diego State College

Department of Political Science

For information on this program see p. 36 of Chapter VI.

5. San Francisco State College

Urban Studies Program

In September 1966, SFSC through its School of Behavioral and Social Sciences, inaugurated two curricula, B.A. in Urban Studies and M.A. in Social Science (with urban studies concentration). These programs have already attracted an enrollment of nearly 100 student majors; ten undergraduate degrees were awarded in 1967–68 and it is expected that 1969–70 will see the granting of sixteen B.A. and four M.A. degrees. The 1977–78 enrollment is projected at 200 with seventy-five degrees granted, twelve of them at the graduate level.

The programs are presently operated through the interdisciplinary cooperation of a number of departments in the School, but there is now a proposal for the creation of a graduate Department of Urban Studies which would take over the B.A. and M.A. programs in that field and also offer certificates in urban affairs and community development. See Chapter VI, p. 36*f*.

The proposal distinguishes between "Urban Studies" and "City and Regional Planning," the intention being to offer studies based broadly in sociology, geography, economics, political science, and social science, with relatively little design experience or any special vocational focus of a technical nature. It is, however, proposed that after three years of operation there should be a review of experience to consider whether such a department should add to its offerings a graduate program in city and regional planning of a sort that would meet the recognition standards of the AIP.

6. California State Polytechnic College, San Luis Obispo

School of Architecture (Figure 7)

The environmental design program at this college began in 1948. Conceived as a branch of engineering, housed in the Engineering Division, and named Architectural Engineering, the program adhered to the four-year pattern usual in engineering instead of adopting a five-year curriculum that might have been accreditable by the architectural profession. An early motivation was to provide job skills to veterans returning from World War II who were eager to become employable without prolonged study. Originally focused on technical-vocational skills, the program gradually developed a more professional direction, with most of its graduates adopting architecture rather than engineering as their profession.

The early years of the program were therefore devoted to specialized undergraduate education slightly below a professionally recognized level. It is only very recently that the five-year architecture program has been introduced, the school has become accredited, and it has entered on the process of transferring its major effort to this new level of competence. This requires that it reappraise its role in the State system and that it change the image that resulted from its years in four-year architectural engineering.

Among California public institutions, this was chronologically the second architecture program to be introduced. Unquestionably it will remain one of the most important no matter what new programs are introduced elsewhere.

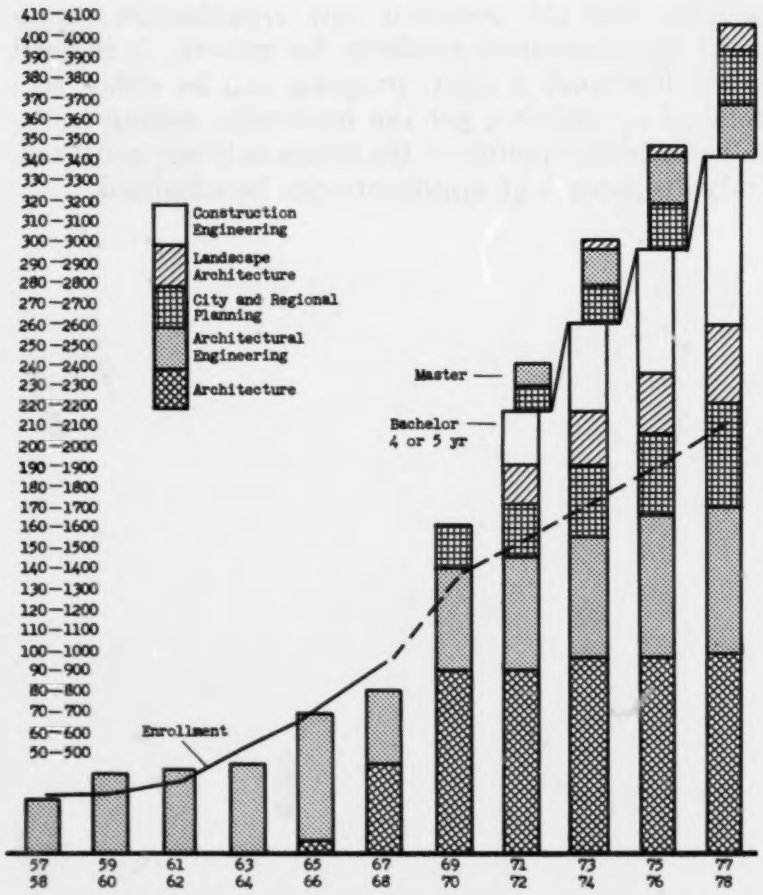
The School now suddenly finds itself, after a humble and inauspicious beginning, to be easily the largest in the U.S. It enrolls over 10% of the students at CS Poly SLO, whereas the typical school of architecture is only 2 or 3% of its institution, and is hardly visible in the mass. Since growth in the last five years has been explosive, it is currently very difficult to evaluate the school's performance. More than 400 freshman students were admitted at the beginning of the current year, but only about 70 students are in their final year of the architecture program. Future retention rates cannot be predicted. It would seem that currently about half the faculty as well as half the students are experiencing their first year at the college.

The School has projected a future growth that would double present enrollments (to 2100 in 1977–78), and multiply five-fold the degrees granted per year (to 400 in 1977–78). It can also demonstrate a plan for enlarging the physical facilities to accommodate

Figure 7

California State Polytechnic College, San Luis Obispo (21)

Degrees Granted—Degrees Projected
Enrollment



such growth. (The college as a whole is projected to grow 50 percent in the next eight years.) A program for a B.S. in City and Regional Planning was introduced in 1968 and already enrolls twenty juniors.

The projected growth plan includes a further diversification of programs. Architectural engineering would be retained as a major, while landscape architecture and construction engineering would be added. All of these would be four-year undergraduate majors, but architecture would continue as a five-year accredited program. Graduate programs would also be introduced, except in the straight architecture curriculum, where the School is inhibited by the provision of the Donahoe Act of 1960 according to the University exclusive jurisdiction over graduate instruction in architecture. It is probable that if the projected diversification occurs it will be accompanied by some structural decentralization through the formation of departments, but for the present there is a single faculty and budgetary unit.

Independent Colleges and Universities

1. University of Southern California (Los Angeles)

School of Architecture and Fine Arts, Department of Architecture

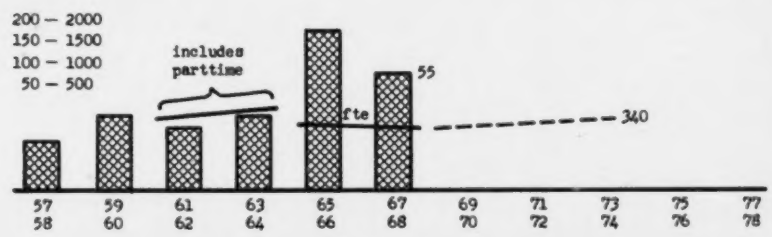
School of Public Administration, Graduate Department of Urban and Regional Planning

For a number of years this privately funded university has been the only professional school for architects and planners in the entire Los Angeles Metropolitan Area, and a preponderant fraction of native local practitioners in these fields are alumni. The community is in debt to the university for a service that will continue, but which cannot be enlarged in proportion to the population pressures now occurring.

Figure 8

University of Southern California (21)

Degrees Granted
Enrollment



The architecture program at USC (Figure 8) was established in 1919, and has graduated about 1,200 in a half-century. It currently enrolls from 250–300 students and produces 50–55 graduates annually. In 1968 the curriculum was changed from a five-year B.Arch. program to a six-year program, with B.S. at four years and three parallel two-year programs for the master's degree in architecture, building science, and urban design. Most students are expected to enroll in the generalist program for the M.Arch. About one-fourth of USC architecture students are nonresident of California. The projection for the next ten years is continuation at about the same or slightly increased levels of enrollment.

The program in urban planning, first recognized by AIP in 1964, was in 1965 placed, for administrative purposes, in the School of Public Administration, but it retains for practical purposes features of its previous linkage with the School of Architecture and Fine Arts. Subsequent to this change, the university formed the Von Kleinsmid Center which includes politics, international relations, and public administration. The Department of Urban and Regional Planning may become a school and in any event will be a component of that Center.

The curriculum is a two-year program for the degree of Master of Planning, but it is foreseen that within this program there will soon be two distinct paths. The first will be aimed at preparing professional planners according to the standards established by AIP; the second will be a broader program in which much of the work will be in interdisciplinary seminars and workshops, with students in other urban fields, and fitting with the university's new doctoral program in urban ecology.

About half of the USC planning students are nonresidents of California. An important and continuing component of the program is continuing part-time education for personnel who are at work in regional planning agencies and who are working to improve their qualifications. The present enrollment is only about forty-five, and the optimum is seen as ninety.

2. Stanford University

Department of Art and Architecture, Division of Architecture

Stanford's program in architecture was begun in 1950; it is now a six-year program with a B.A. at four years and an M.Arch. at completion. Its most remarkable attribute is its small dimensions; enrollment has never exceeded seventy and the output of professional degrees (M.Arch.) averages only about seven per year. There appears no present plan to expand, but there is a proposal to shift architecture from the School of Humanities and Science and to realign it in the Center for Environmental Design under the School of Engineering. The program has undergone constant experimentation and flux; it is possible that the proposed new organization would make more resources available for growth. It is hard to see how such a small program can be either economical or effective, yet the university setting is excellent and the quality of the students is unquestioned. Only 10 percent of applicants can be admitted.

CHAPTER V

Community College Programs

As indicated in the preceding chapter, the population of the two-year institutions of California (522,000 out of a total of 901,000 in all higher education in 1967) is so colossal that the implications of the system for professional education must be considered in this study.

One of the imporatnt roles of the Community Colleges is to provide students with a convenient and economical way to continue their general education beyond high school into those lower division academic studies that may lead to the college B.A. or B.S. This role raises no questions of professional education, provided the colleges and universities are prepared to accept such work for transfer. There is a very substantial flow of such students into all the four-year institutions, and their progress following transfer is usually normal.

The Community Colleges also offer a very wide range of vocational training programs aimed at satisfying both the market demand for people having certain technical skills and the students' need for immediate, gainful employment. These programs correspond to appropriate and necessary skills, and make productive careers for young people whose learning modes fit these skills rather than more academic and scholarly pursuits.

Sometimes these vocational programs are in subprofessional or paraprofessional areas, and seek to prepare technicians who can contribute to the activity of practicing professionals, performing work that in former times was done by apprentices on their way to becoming professionals. It is then that they raise troublesome questions of policy that are wider than the scope of this study.

One question relates to the graduating technician who becomes employed in a professional office. Does he have a chance, on demonstrated merit, to advance toward full professional status, and what is the mechanism for providing this chance?

Another question concerns the student in a vocational program who is found to have the aptitude and motivation for full professional studies. Can he transfer to a degree-granting program, and can his vocational work be credited toward his professional studies?

These are knotty questions that have no easy answers. There is indeed a market for certain skills that support professional practice. But some professions have done very little to guide or control the curricula that prepare for them. The skills, themselves, since they do not involve full professional decision making, are subject to change and obsolescene, and some may ultimately be entirely superseded by automation. Any curriculum of this sort must lay the groundwork for further learning in the field and for adaptation to new tasks.

There is an additional and perhaps removable difficulty: in public agencies, even the first job may be out of reach because civil service regulations do not recognze sub-baccalaureate education as qualifying.

With the aid of the Office of the Chancellor of the California Community Colleges, forty-seven colleges with programs in fields related to environmental design were interrogated; forty-three responses were received, three of which disclosed no such program. The conclusions drawn are therefore based on the remaining forty returns. (Figure 9)

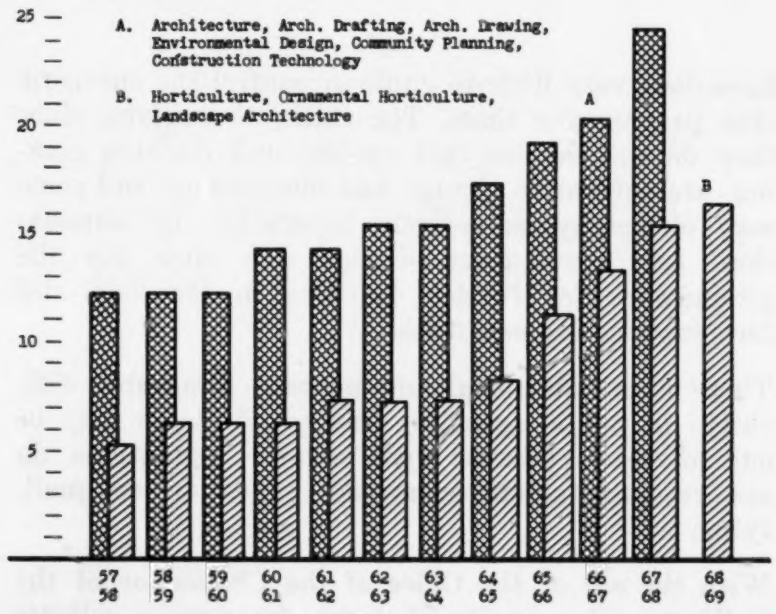
Only seventeen of the curricula in environmental design areas are more than ten years old. From 1957 to 1963 the number of programs increased only to twenty-two. Seven of these were named Horticulture, Ornamental Horticulture, or Landscape Horticulture, while the remaining fifteen fell into an architecture- and planning-oriented group with designations such as Architecture, Architectural Drafting, Architectural Drawing, Architectural Technology, Environmental Design, Community Planning, and Construction Technology. One of these, Art and Architecture at Marin, is primarily concerned with art. After 1963 the rate of increase in the number of available programs rose sharply in both groups. The architecture group increased to twenty four, the horticulture group to fifteen, more than doubling in five years.

The horiticulture group appears to be primarily concerned with training for employment in nurseries and for the maintenance of landscape installations. Many of the students attending the horticulture programs are without a high school diploma (21). Teaching in landscape design and engineering occurs to a limited extent, but the emphasis is far greater on the identification, propagation, and management of landscape materials. These skills would appear to be well suited to vocational curricula of two years' duration, and graduates of these programs fill a role quite different from that of landscape architects, although

Figure 9

California Community Colleges (21)

Two-year Programs—Related Fields



some might occasionally be employed in a design office. Hence there is little reason to consider such programs as overlapping professional education in landscape architecture.

With the architecture and planning group the conditions are different; high school diplomas prevail; the work is clearly aimed at skills that are useful in professional offices, and many colleges find themselves counseling able students to seek transfer with advanced standing to full professional programs at four-year institutions. These programs need closer scrutiny both by the four-year institutions and by the professions, including feedback as to the performance of graduates in professional studies and in professional offices.

Community Colleges are a highly decentralized form of education, and typically the programs we are considering are small, although many institutions have total enrollments over 4,000. Only two of these programs, Architecture at East Los Angeles and Art and Architecture at Marin, have as many as eight specialized faculty members, and sixteen of the forty programs are represented by a single teacher. Enrollment, full time and part time, averages about eighty students, but average annual output of holders of the two-year certificate is only about ten per college.

Considering only the twenty-four programs in architecture and environmental design, 272 graduates emerged with certificates in 1967–68. Judging by what the schools themselves say about the distribution of their effort, we might expect almost half, 130, to seek transfer to programs of professional preparation. Whether they will or not we cannot ascertain. The architecture program at UC Berkeley reports that 15% of its new B.A. candidates transfer from Community Colleges, and at CS Poly SLO the figure is 37%. The numbers of transfers are insignificant in the remaining architecture programs in the State. Yet at these two schools the total in 1967–68 was about 127, somewhere between 15 and 20% of all the new recruits to architecture schools in California. However, this total includes those graduating from college-preparatory programs as well as the students in the vocational programs.

No data are available on the proportion who have been enrolled in specialized courses or programs. As to performance, reports vary. UC Berkely reports that community college transfers who have been on a straight academic path do just as well in the Berkeley program as students who enter as freshmen, but those who have specialized in design or the technical aspects of architecture do very much less well; their general education has been neglected, while their specialization has given them concepts of architecture that have to be unlearned. At San Luis Obispo, where the entering freshman student is called upon immediately to use technical skills, the Community College vocational preparation while not fully transferable is not considered a handicap. That School of Architecture is in communication with some of the community colleges to make better curricular matches for transfer students.

Curricula vary greatly in intensity. In two of the horticulture programs, the specialized subjects are reported to occupy 100 percent of the curriculum, but in many other programs the specialized portion constitutes only 25 or 30 percent of a two-year curriculum. Almost all programs predict an expansion of enrollment, so that the total enrollment would grow from about 3,200 in 1968 to about 5,800 in 1978. Considering in addition the inevitable further growth in the *number* of programs, the students and teachers involved will probably triple during the next decade.

Among the architecture group the oldest programs are in colleges having large total enrollments, located in big cities (East Los Angeles '45, Los Angeles City '46, San Francisco City '47, Long Beach City '50). These older programs also tend to be the largest in size, and they are of course the most experienced. Other programs with more than average enrollments are at Marin, Sacramento City, Diablo Valley, Southwestern, and San Bernardino Valley.

Each college reporting an architecture program lists three to six courses that constitute a specialty, and emphasis varies from one program to another. The category of subjects most frequently listed contains various kinds of drawing, drafting, detailing, design, graphics, delineation, rendering, perspective,

and shades and shadows. A technical category features surveying, statics, strength of materials, building materials, construction, equipment of buildings, specifications, inspection, and building codes.

Attention is paid in a few schools to the history of architecture.

A cursory review of these titles suggests that the Community Colleges have inherited the subject matter predominant in professional schools of a bygone time, and have applied it with no updating or innovation. It is a mistake for these schools to copy a form of education from an earlier period, and to try to do in two years what so many others did badly in four or five years. Yet it is a hard pedagogical problem to impart in two years enough specificity for immediate employment in some role supporting the profession, while remaining sufficiently open to allow students to continue to broaden their experience, lest too-specific skills become obsolescent.

A recent task force of the AIA has produced a policy paper proposing a program for "Architectural Technician's Training," to consist of two academic years plus two years on the job with courses in continuing education, and leading to a new kind of certification. They propose that the student should choose among three types of programs: (1) *drafting specifications, estimating,* with knowledge of design, mathematics, building materials and systems; (2) *graphic arts, models, reproduction,* with knowledge of design, mathematics, and skill in graphic communication and interpretation; and (3) *administration, data processing, and information,* with knowledge of business organization and procedure and of the computer.

Specifications have also been prepared for the use of the California Community Colleges regarding education for paraprofessionals in planning: planning-aide trainee, planning aide, planning technician, and junior planner.

The first Community College to establish a planning program was Merritt, with its Community Planning program of 1965. It features two distinct kinds of courses. One category imparts employable skills in planning graphics—the ability to execute maps and plans—while the second contains courses that describe the urban environment, the processes of its development, its problems, and the efforts of government to deal with them. Additional courses are to be included from selected areas. With growing concern for urban problems and interest in the profession of city planning, it is inevitable that programs in urban affairs will multiply vigorously in the years ahead.

A review of these diverse proposals suggests that the Merritt College curriculum may be a superior prototype. Its main thrust is to give the student a perspective on an entire field of professional work, with only a minimal amount of time spent practicing the skill in graphics that qualifies him for his first job. This would be good preparation for further learning in the field, but it does not answer the dilemma of college transfer.

In summary, the Community Colleges are an essential complement to the academically selective four-year institutions. They are of great social importance because they open higher education to sectors of the population whose economic status, cultural set, or academic performance prevent at least temporarily the pursuit of conventional tracks to professional status. The total system is not yet adapted to extend such opportunity into roles that participate fully in the professions of environmental design, and this is probably true for other professions as well.

(no p.32)

Projected and Proposed Programs

This chapter enumerates the institutions where it is known that consideration is being given to new programs, and summarizes the nature of these proposals, where information is available.

University of California

1. Berkeley and Los Angeles

Future programs are mentioned as extensions of existing programs in the general description given in Chapter V.

2. Irvine

Under campus consideration is a School of Architecture and Environmental Planning that would have both undergraduate and graduate instruction.

3. Riverside

Campus consideration is being given to the establishment of a School of Architecture.

4. Santa Barbara

Included in the 1967 Academic Plan of the Santa Barbara campus is a proposal for a College of Architecture and City and Regional Planning. This plan has not been acted upon by the Office of the President.

The proposed college would offer parallel six-year curricula leading to two professional degrees: M.Arch. and M.C.R.P. Students would be enrolled at lower division level and after completion of lower division requirements would be carefully screened for motivation and aptitude to enter the elementary professional program of the third and fourth years. Following the award of the B.A. degree, students would again be screened for continuation at graduate level toward the professional degrees. The graduate program would also admit candidates from other institutions. After nine or ten years of operation programs leading to the Ph.D. would be introduced.

As soon as the demand for graduate landscape architects becomes sufficiently apparent the college would institute a professional program in that field as well. The first procedural step would be to select and appoint a dean, who would then be allowed a year to plan curricula, recruit faculty, and begin steps to provide a new facility, including a specialized library. Student enrollment would begin at a total of 120 students in all levels and reach approximately 600 in ten years of gradual growth. Such an enrollment would have 300 in the lower division, 200 in the upper division, and 100 in the graduate programs. The proposed ratio between planners and architects is not stated. Student-faculty ratio would be 10 to 1. Ultimate enrollment would be 750.

5. Santa Cruz

A School of Landscape Architecture is mentioned in the campus academic plan as beginning in 1972.

6. San Diego

Campus consideration is being given to the establishment of a School of Architecture and Environmental Planning with instruction at undergraduate and graduate levels.

California State Colleges

1. California State College, Long Beach

Master of Science in City and Regional Planning

This college has proposed to offer a graduate degree in planning to be sponsored jointly by the following departments: Art, Civil Engineering, Economics, Geography, Political Science, Recreation, and Sociology. The degree program would be administered by a governing committee having representation from the several departments concerned. The degree requirements would include twenty-nine units of graduate study and a comprehensive examination.

Although the proposal states that ideally the chairman of the governing committee should be a member of the American Institute of Planners, there is no indication of intent to develop a faculty containing professional planners. The seven departments involved are distributed among several schools of the college.

The college is well located for access to study materials and has capacity for further growth; however, the Los Angeles area already has one graduate program in planning at USC, and another one is being mounted by the School of Architecture and Urban Planning at UCLA.

Since there seems to be no intention at CSC Long Beach to establish a separate faculty with departmental status, but merely to offer an amalgam of existing courses in several departments, it seems appropriate to suggest a reconsideration of the proposal. Perhaps it should be recast as an undergraduate program with a concentration in urban studies. The success of this venture would then provide a base for a later professional undertaking at the graduate level. Students with a serious professional orientation will not be attracted to a program

Table 2

New Programs Under Consideration or Proposed But Not Approved

	Architecture	Landscape Arch	City Planning	Urban Studies
UNIV of CALIF				
Berkeley	----------	Ph.D.		
Los Angeles	Ph.D.	----------	M.A.P. Ph.D.	
Irvine	considered	----------	considered	
Riverside	considered			
Santa Barbara	proposed	proposed	proposed	
Santa Cruz	----------	considered		
San Diego	considered			
CAL STATE COLLS				
CSC Long Beach	----------	----------	M.S.C.R.P.	
CSC Los Angeles	----------	----------	B.A.C.R.P.	
CS Poly Pomona	B.Arch.	M.S.	M.U.P.	
San Diego SC	----------	----------	----------	B.A.U.S. M.A.U.S.
San Fo Valley SC	----------	----------	M.A.C.R.P.	
San Francisco SC	----------	----------	----------	M.A.U.S.
San Jose SC	----------	----------	M.U.P.	
CS Poly SLObispo	B.S.Con.E. M.S.A.E. M.S.Con.E.	B.S.L.A. M.L.A.	B.S.C.R.P. M.C.P.	

(In addition, CSC Fullerton projects the M.S.U.S. in 1971 and CSC Dominguez Hills the M.A.U.S. in 1972, but these have not been described in proposal form)

lacking adequate professional staff and organizational identity.

2. California State College, Los Angeles

Bachelor of Arts in City and Regional Planning

The Department of Government of CSCLA has organized a Committee on City and Regional Planning composed of nine faculty members from the Social Science Division and from the Departments of Government, Geography, Sociology, Art, and Engineering, plus six professional planners from the Los Angeles area. This group recommends an undergraduate program in planning, to be in charge of a present member of the Department of Government and related to that department's existing program in public administration. A continuing interdisciplinary committee would assist and advise the individual professor in charge.

The proposed curriculum would require 28 lower division units and 45 upper division units, so that the required portion of the four-year program would be 55 percent of the total of 132 units. However, the proclaimed intention is that this core would consist almost wholly of courses that are already offered in the fields of art, economics, surveying, cartography, physical and urban geography, mathematical analysis, sociology, social statistics, architectural design, public administration, municipal and financial administration, population and world resources, and community organization. There already exists in the Department of Government a one-year course, *Introduction to City Planning,* six units, taught by a professional planner, which develops the theoretical concepts underlying practice.

The only new course to be introduced is a one-year *City Planning Practicum,* six units, consisting of exercises in the methods and techniques of planning. This would also be taught by a planner, but the task would only amount to one-fifth FTE addition to the current staff. Within five years it is expected to reach a level of operation that will award forty to fifty degrees annually.

Located in the midst of one of the largest urban complexes in the world, CSCLA would have no shortage of study materials, motivated students, or nearby professionals. The college has done well to consult local professionals; the proposed program gains strength from well-developed faculties in government, sociology, and geography; the contributions in engineering and architecture will, however, be minimal, and the amount of actual planning theory and practice included in the program is very small.

There is also the objection that undergraduate programs in city planning have not prospered to the same extent as graduate programs, and current enrollment in them is only one-fifth of total national planning enrollment. It is possible that since the profession is growing in recognition and visibility, and will consequently appeal to a wider spectrum of students, undergraduate programs will become more popular. Their character should change; instead of trying to turn out professional planners they should provide a broad base of knowledge about urban affairs as seen through the traditional academic disciplines.

The student who graduates will be in a good position to be a well-informed planning apprentice or to pursue graduate studies of a more precise professional character, either in city planning or in some allied field.

CSCLA's proposal fits this more general concept; until it establishes a separate faculty whose chairman reports to a dean, it will not be "recognized" as professional by AIP—indeed ASPO has been loath to recognize any undergraduate programs. It would therefore be better to avoid the professional name "city and regional planning" in favor of the broader title of "urban studies." The coursework in the theory and practice of city planning would then be included as illustrative of how city problems can be approached without the implication that professional skill levels are being attained.

There are two ways in which an undergraduate program leading toward the professions can be objectionable. First, it can be conducted at too small a scale and with inadequate resources, so that it is both intellectually inadequate and economically wasteful. Second, it can, by duplicating in abridged form the substance contained in fully professional programs, blur the distinction between elementary and advanced

work and incur the opprobrium of the graduate schools.

CSCLA has the possibility and the obligation to avoid both pitfalls. Let it remain a specialization within a strong Department of Government, with support from other departments and a new input from professional planners. At a later stage consideration can be given to graduate studies and departmental status.

3. California State Polytechnic College, Pomona

Master in Urban Planning

CS Poly Pomona has six schools, of which Agriculture is one of the most important. In it is lodged the Department of Environmental Design, offering undergraduate programs in landscape architecture and urban planning (see Chapter V). The college has indicated a desire to offer the master's degree in planning. No detailed description of the proposal is available.

Clearly California needs additional programs in the urban planning field (see Chapter VII). However, graduate work in planning implies advanced study and research at professional levels of competence. An order of preference must be established among the institutions that wish to enter this area. The conditions at Pomona suggest the following considerations which under present conditions are somewhat negative:

a. City planning as a profession continues to move strongly toward emphasis on sociological, demographic, political, and economic aspects of urban problems, with diminishing emphasis on physical design. CS Poly Pomona has traditional emphasis on the polytechnics; the social sciences have in consequence not as yet been developed and departmentalized to the extent found in other State Colleges. The institution lacks the support in depth of graduate faculties in psychology, geography, political science, government, and sociology, including full library resources in these areas. Although there is reinforcement from landscape architecture, there is only the beginnings of a program in architecture.

b. Lodgement of urban planning in a School of Agriculture appears to be an anomaly; neither does it belong in Arts, Business Administration, Engineering, Science, or Teacher Preparation, the remaining Schools in the college. The establishment of a new School would seem to be a necessary condition.

c. As a location Pomona would be acceptable. Although it is not so convenient as it might be to problem materials of the old city center, it is in a rapidly growing suburban region, parts of which have been settled for a long time. The proximity to private colleges in the Pomona area may have advantages in attraction to faculty and for availability of supporting resources.

Bachelor of Architecture

The Department of Landscape Architecture at CS Poly Pomona presently offers an "architecture option" within its four-year program to the degree Bachelor of Science. About 12 percent of the coursework therein is peculiar to that option. The college has now indicated the wish to offer the degree of B. Arch. No detailed description of this proposal has come to hand.

As in city planning, other California institutions are considering the establishment of programs in architecture, and a preferential assessment is required in order that such programs, when needed, can be lodged where they will have the best chance for distinction.

The proposals for the addition of urban planning and architecture at CS Poly Pomona stem from the desire to round out the existing program in landscape architecture with the other elements of the environmental design professions, so as to make a richer and more competent whole. They also stem from the stated intention of the college's administration to shift its emphasis toward social and urban fields.

Historically, departments of landscape architecture have been small and no precedent is known for their acting as magnets to attract sister professions. Both city planning and architecture are complicated and dynamic pursuits that require a critical size in order to be adequately staffed. It is costly to achieve distinction in these areas. In the case of CS Poly Pomona the initial nucleus of landscape architecture is under 300 students, 4 percent of the total college, and there is the problem of its affiliation with agriculture, which would be unacceptable to architecture as it is to city planning.

Three possibilities for its further development merit examination:

a. Adoption of the stated plan for the establishment of a new School of Environmental Design at CS Poly Pomona, possibly at a scale that would soon grow to 500 and level off at something less than 800. This could contain all three fields in mutual support, but it would have to be developed slowly because it would require concurrent development in the several fields of social science, to give adequate support to the study of urbanization.

b. CS Poly Pomona lacks present capability for adequate treatment of structural engineering and other aspects of building technology essential to an architecture curriculum. These would have to be built up at considerable expense. One could, however, visualize a program in "urban design" or "community design" that would coalesce the

proposed programs in architecture and urban planning. By choosing a limited target, the concentration on the physical aspects of urban growth, the college would build directly on its strength in landscape architecture, minimizing its lacunae in building technology on the one hand and social sciences on the other. This could in fact be the substance of a two-year graduate program in the Department of Environmental Design, and might attract some students already grounded in architecture or city planning from other institutions.

c. The future of landscape architecture at CS Poly Pomona might be steered in the direction of affiliation with the ecological sciences and the management of natural resources. This is an emphasis that has been found congenial at other schools of landscape architecture, especially those not closely coupled with architecture and city planning. The study and classification of landscape resources, and the development of policies and procedures for their use in other ways than for agriculture or extractive industry, is a new, important, and socially valuable multi-professional task. In Southern California, however, urbanization may be the overriding problem, forcing into the background any studies that do not address it directly.

Any of the three possibilities outlined would require the substantial development at Pomona of graduate studies in collateral fields.

4. San Diego State College

Master of City Planning
Bachelor of Arts in Urban Studies
Master of Arts in Urban Studies

Approval by the Chancellor's Office was given in November 1967 to the college's proposal for a two-year graduate program for the professional degree M.C.P. Within a short time the College will also propose programs leading to the B.A.U.S. and the M.A.U.S. Although two faculty appointments have been made, progress toward implementation of the M.C.P. program has been slow, perhaps attending the publication of this report. Except for two upper division and one graduate seminar, no specific work in planning has so far been offered, but design and workshop courses are being developed.

Responsibility for the M.C.P. program rests temporarily with the Public Administration sector of the Department of Political Science which, together with the Department of Economics, is well developed. Support also comes from the Departments of Anthropology, Geography, and Sociology. There are Departments of Art and of Civil Engineering, but it is not clear what contribution either could make.

The 1967 proposal states the intention to move toward the establishment of a Department of Urban Planning and to seek AIP recognition of the professional curriculum. Appropriate physical facilities, particularly for workshop courses and faculty offices, will also be needed before these objectives can be achieved.

A strong justification for all three of these programs is the present lack of such studies in the San Diego area, and the unlikelihood of their early introduction at any other institution in this rapidly growing region.

5. San Fernando Valley State College

Master of Arts in City and Regional Planning

The proposal for this degree comes from a college that has an undergraduate program in urban studies in which the following Departments participate: Economics, Geography, Political Science, and Sociology.

That program can be accomplished by any student having a major in one of these departments if he will concentrate his electives in the others. The college also has a Center for Urban Studies for the coordination of the general field.

The departments named above are strong at the college, but there appears little present support in areas of design and technology. Also, this institution is only one of several that have prospects for city planning in the Los Angeles area.

6. San Francisco State College

Master of Arts in Urban Studies

Through action by the Council of its School of Behavioral and Social Sciences and its Undergraduate Curriculum Committee, this college in September 1966 inaugurated an urban studies program on a three-year trial basis. Leading to the degree of B.A. in Urban Studies, this is an interdisciplinary program administered by an Urban Studies Committee, with courses contributed by the Departments of Sociology, Geography, Economics, Political Science, and Social Science (see Chapter IV).

The Urban Studies Committee has found its administration of the program unwieldy and ineffective; it also finds a substantial demand for graduate work in urban studies which it has tried to meet through an interdisciplinary program within the M.A. in Social Sciences.

The Director of Urban Studies has prepared a proposal for the creation of a graduate Department of Urban Studies which would take over both the B.A.U.S. and the M.A.U.S. as well as offer certificates for shorter career courses, and would explore at a later date (1972) the prospects for a program leading to the Master in City and Regional Planning. At its initial stage the proposed department would have three fulltime faculty members, and the enrollment would soon grow to 200 FTE undergraduate, 100

graduate students. Already in the existing program there were a year ago forty-eight undergraduate majors and fifteen graduate students, and only 1.75 FTE faculty.

The program has a heavy emphasis on social sciences and applied research combined with vocational training and practical field experience. This combination is felt to be sufficiently unique and foreign to the present style of any of the departments in social science to justify the creation of a new department within that school, which would build its own faculty and course work while continuing to enjoy the support of the original contributing departments.

The proposal makes clear a distinction between "urban studies" and "city and regional planning." The former is not intended to substitute for the latter although it deals with the same subject matter. No effort would be made initially to conform to AIP recognition standards or to cope with accreditation problems associated with advanced degrees in planning. If after operation of the urban studies program it appears desirable to convert it to or augment it by an M.C.P., or equivalent degree program, that step could be taken. In the meantime, the Department of Urban Studies would be an expression of SFSC's way of working on urban problems by an emphasis on its present strengths in sociology, economics, geography, and political science.

In the advanced work, emphasis would be placed not only on developing the research capability of the students but also on cultivating the off-campus opportunities for advisory and consultative activity, so that the fruits of research would have an influence on decision making and the conduct of programs in the immediate urban area. Unquestionably the location of the college places it where such interaction can be fostered.

This program appears to be the most competent among the urban studies curricula being established in the state colleges that have big city locations, but like the others it illustrates the difficulty of innovating new programs at a scale sufficient to assure success. The difficulty results from the application of rigid formulas for the allocation of faculty resources. In effect the students are expected to signal their needs by enrolling in programs that are not yet of viable size.

7. San Jose State College

Master of Urban Planning

An ad hoc Committee on Urban and Regional Development at SJSC, with members from the Departments of Economics, Art, Biology, Civil Engineering, Geography, Geology, Meteorology, Political Science, Real Estate, Recreation, and Sociology, have prepared a proposal for a degree program in urban planning. The Committee had advisory members from the planning profession and its proposal incorporates suggestions resulting from its review by eight practitioners in the field.

The proposal involves the immediate creation of a new Department of Urban Planning with at least two full-time faculty plus part-time lecturers in the initial stage. The curriculum would require two years full-time, including a requirement for summer internship without credit. Four successive studio courses are included for workshop and field-work exercises as well as other departmental courses to a total of thirty-three units. Thesis project and final examination are required.

The curriculum shows an effort to provide a broad general understanding of urban public policy issues, land-use planning, urban information, planning administration and implementation, health, housing, social psychology, transportation, law, and renewal. All of these provisions reflect the intention to establish a professional program entirely at the graduate level which will exhibit, even at the outset, all of the characteristics required for its recognition by the AIP and its affiliated agencies.

The clearly stated purpose is to increase the capacity of the college to provide personnel to meet increasing demands for qualified manpower in local government and urban development fields, specifically to supply professionally qualified generalist urban planners.

Within five years the enrollment is projected to be fifty to sixty fulltime and fifteen to twenty part-time students, and this would put the new department somewhat above the present average size of such departments throughout the U.S. The part-time enrollment is significant; the department, in the spirit of State College policy, would make a special effort to reach the employees of nearby planning agencies and enable them to complete degree requirements while employed; this is a major need of the profession in California.

The entire program is also aimed at meeting a regional student demand and at supplying personnel for specifically regional planning jobs. In both these characteristics it differs from and complements the nearby department at UC Berkeley, which serves the entire State and even a national and international constituency.

The SJSC program is also complementary, in a different way, with the less specifically professional program in urban studies being proposed at SFSC. The San Jose region, at the expanding southern tip of the Bay Area agglomeration, offers ample material for the study of the processes of rapid urbanization.

8. California State Polytechnic College, San Luis Obispo

Bachelor of Science in Landscape Architecture
Master of Science in Landscape Architecture
Master in City Planning
Master of Science in Architectural Engineering
Bachelor of Science in Construction Engineering
Master of Science in Construction Engineering

The School of Architecture at CS Poly SLO presently awards the B.S. in Architectural Engineering and the Bachelor of Architecture. It has the approval of the Chancellor's Office to award the degree B.S. in City and Regional Planning not earlier than 1968–69. The future plans of the school include the addition of programs leading to the six additional degrees above named.

As explained in the description of existing programs, enrollment in this school reached its present magnitude and growth rate in the absence of other choices for students of architecture within the State College system. Certainly, neither the previously prevailing range of concerns of the college nor its location away from centers of population could have been conducive to such growth. Aggressive leadership within the School and the willingness to cope with the problems of rapid growth have played a large part in its success.

There now appears a turning point in environmental design education; the growing demand for higher education will force a breakthrough and perhaps in a short time double the number of programs in architecture and city planning available in public institutions. Under these foreseeable new conditions it may be pertinent for CS Poly SLO to reconsider the scale of its future planning, the nature of its projected offerings, and the time required for their realization.

The continued viability of the School as a major center for the study of environmental design is not in question. The challenge is to guide future development in directions that will enhance strengths already present and build on the positive factors inherent in the environment.

The early history of the program with its emphasis on vocational skills has blossomed into a concern for the craftsmanship of architecture as demonstrated by the full-scale construction experiments engaged in successfully by student groups. One of the positive aspects of a semi-rural environment is the availability of space for such work. Another is the absence of big-city involvements that can be educational but are distractions from fulltime dedication applied to experimental work with architectural form.

The program in architectural engineering and the proposed program in construction engineering (intended for personnel who will be directly engaged in field activity) are consistent with this emphasis on the material and craftsmanship of architecture. They should be developed into the fullest possible study of building technology.

Landscape architecture is another profession and, although it is growing rapidly, the total numbers are small. Should additional California programs be needed, they should be located in institutions dissimilar to the settings provided by the only two other schools, UC Berkeley and CS Poly Pomona. As institutions, the Polytechnic Colleges at Pomona and San Luis Obispo are somewhat similar; their competition in fields that are not widely distributed is questionable, yet there may be no alternative except to establish a new landscape architecture program where there is no architecture, which would be worse.

To locate a graduate program of city planning at CS Poly SLO also appears questionable, but for different reasons. More such programs are needed, but a number of other institutions that have proposed them have more persuasive claims. Advanced work in this field can benefit from association with architecture and landscape architecture, but even more it needs proximity to advanced work in several of the social sciences. It needs ready access to a vast body of specialized literature, much of it ephemeral and hard to collect. These are in-house components that could be built up over time, but it also needs close communication with planning agencies and other sectors of local government.

It needs firsthand contact with a vast range of urban conditions and problems. The location of the college limits such resources.

If city planning is seen exclusively to be the physical design of new urbanization, the college's location would be less of a handicap; the San Luis Obispo area does contain many attractive sites for potential development which are already being used by architecture students as subjects for study. But this activity though certainly important, is not the central concern of the planning profession as a whole; it would be more descriptive to call such studies "urban design" or "community design" and to regard them as specialties within architecture.

The School of Architecture is probably wise to diversify its degree offerings; increasing the choices available to the student is a good way to improve the retention rate of the student population. Whether these choices should appear at the undergraduate or graduate level depends on the goals of the college and the goals of the students who apply. As the State Colleges take on an ever larger proportion of professional education, graduate work through the master's degree will increase. Some day it may be appropriate to have only one or two undergraduate degrees in the school and save the real specialization for advanced work.

CHAPTER VII

Estimated Needs

The future enrollments in higher education to meet the needs of the environmental design professions cannot be predicted with precision. Factors already alluded to in foregoing chapters will stimulate growth, but some of these are not quantifiable.

In the aggregate, both in the U.S. and in California, student population in the professional schools of environmental design exceeds 50 percent of the number of active practitioners. Degrees granted annually are roughly 9 percent of present practitioners. There is no present evidence that this apparent excess of supply over replacement requirements is causing any glut. Examination of the market for new graduates in these fields shows that in spite of vigorous recruitment efforts many jobs remain unfilled, or must be manned by persons whose education is insufficient to meet the desired specifications. Increase in professional opportunities is more than enough to absorb newly trained personnel. A summary of the statistics relevant to the present situation may be of interest at this point.

Viewed as in Table 3, certain truths are apparent. Bearing in mind that California has only 10 percent of the U.S. population but has a population growth rate double the national average and produces more construction per capita, it seems appropriate that in the aggregate the State should award 12.2 percent of professional degrees. In overall ratio of degrees to practitioners California also slightly surpasses the national average.

It is in the comparison between the professions that startling anomalies appear. California is slightly deficient in its percentage of licensed architects, tho' h it is awarding architecture degrees at a reassuring rate. The State's extraordinary activity in landscape architecture and city planning is reflected in the very high percentages of U.S. practitioners who are based there. As indicated earlier, these professions, although small, are growing more rapidly than is architecture; note in this connection that in the U.S. the number of degrees granted annually as compared to practitioners is 12 percent for city planners, as against only 9 percent for architects. Yet California falls far short of this norm. Proportionally the State now awards *only one-third the planning degrees* that would be required to keep up with the nation. Since its population is growing more rapidly, its educational capacity might be expected to exceed the national norm, as it does in the other two professions.

Table 3

State and National Ratios

Professional degrees granted 1968

	U.S.	California	%
Architecture	2,900 (est)	364	12.5
Landscape	465	82	17.5
Planning	557 (1967)	31 (1967)	5.5
Totals	3,922	477	12.2

Practitioners

Architecture	32,200[1]	3,000[1]	9.3
Landscape	2,500[2]	384[2]	14.9
Planning	4,800[3]	775[3]	16.2
Totals	39,509	4,159	10.4

Percent: degrees to practitioners

	U.S.			California		
	P	D	%	P	D	%
Architecture	32,200	2,900	9	3,000	364	12
Landscape	7,000[4]	465	7	791[1]	82	10
Planning	4,800	557	12	775	31	4
Totals	44,000	3,922	9	4,566	477	10+

[1] Licensed.
[2] ASLA (members and associates).
[3] AIP (approximate).
[4] Estimated total involved professionals.

It must therefore be concluded that in estimating the educational needs for city planning, one must first make corrections for present shortfall and then superimpose the estimate of future growth. The growth problem is dealt with in Figures 10 and 11. Here the national growth rates in environmental design degrees granted are laid against two California yardsticks: 18–24-year-old population and total enrollment in four-year institutions.

Based on the last ten years' performance, *architecture* will grow so that the number of degrees granted in 1977–78 will be 3.00 times that of 1957–58 or 1.60 times that of 1967–68. Note that this projection lies between the 18–24-year-old population and the enrollment in four-year institutions. This is conservative, and may be too low, but it does not include allied

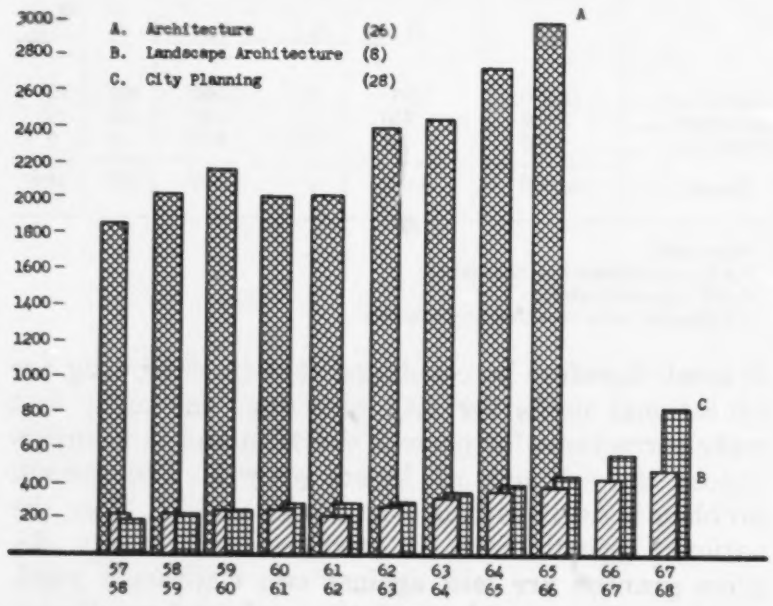
programs such as construction engineering which are not intended to lead to architectural practice. These may well proliferate at a faster rate, and swell further the population of schools of environmental design.

Landscape architecture exhibits since 1962 a faster rate of degree production; a projection of this rate produces the estimate that degrees granted in 1977–78 will be 4.50 times 1957–58 or 1.90 times 1967–68.

If architecture and landscape architecture seem stable enough to be accommodated by straight-line projection, *city planning* is in such a state of dynamic growth that one must choose between a completely wide-open future and some reasonable leveling over time that would gradually approximate a steady percentage of the total educational scene. This study assumes arbitrarily that such leveling will occur during the coming decade, and such a rather conservative view indicates that 1977–78 degrees will be 8.00 times 1957, or 1.90 times 1967. If leveling does not begin soon, the actual number will turn out to be substantially higher. The figure given is not meant to include programs such as "urban studies" that may lead to careers outside the AIP membership categories.

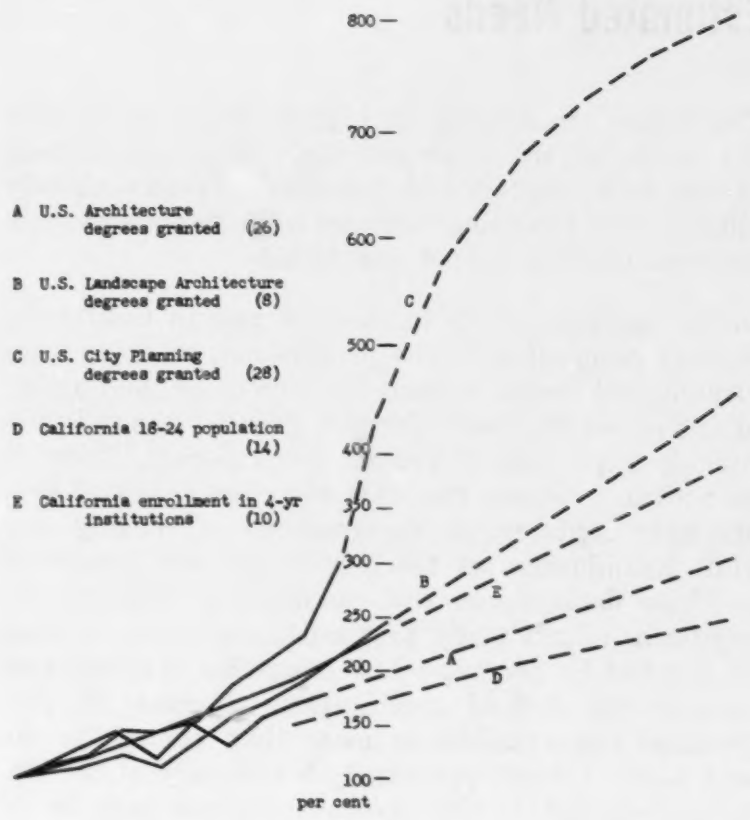
Figure 10

Professional Degrees Granted, U.S.



The effect of these indicators on the California situation may now be examined in Table 4.

Note that degrees must be multiplied by different factors in the different professions to determine enrollments; this is because students are identified with the programs for differing time periods.



These calculations indicate the need for the following *increases* in enrollment by 1977:

Architecture	1450
Landscape Architecture	347
City Planning	564
Total increase	2361

The capacity of the existing programs to satisfy these needs must now be examined.

Table 4

Growth Estimates

	1967 Actual	To Correct Shortfall		1977–78 Projection	
Architecture					
Degrees	364	--		(×1.6)	582
Enrollment	2,417	--			3,867
(Degrees ×6.7)					
Landscape Architecture					
Degrees	82	--		(×1.9)	156
Enrollment	385	--			732
(Degrees ×4.7)					
City Planning					
Degrees	31	(×3.0)	93	(×1.9)	177
Enrollment	120		360		684
(Degrees ×3.9)					

In *architecture,* the slight shrinkage projected for the program at UC Berkeley is offset by a numerically limited development at UCLA, leaving the University entirely dependent on other new programs for further net growth. Enrollment increase at USC seems unlikely to be more than fifty over the next decade.

The largest growth in existing programs is anticipated at CS Poly SLO, yet that School of Architecture intends that most of its growth take the form of new programs allied to architecture. The net increase in students clearly studying to become professional architects may not exceed 200, assuming that only one-fourth of all its students will be in that category in 1977.

The need for new institutional facilities for architectural enrollment will therefore be about 1,200 by 1977. Given the time it takes to assemble faculties, arrange for space, and make new programs known, at least two new departments should be established during the next decade, three if they are to be of only average size.

In *landscape architecture,* most departments are small. There appears to be a limit to the percentage of students in any one institution that can be recruited to this small profession. CS Poly Pomona, with 228 students, all undergraduate, is the nation's largest, enrolling in 1967–68 exactly 10 percent of the U.S. total. The only California program presently offering graduate studies is at UC Berkeley. Neither of these programs projects any substantial expansion, so that virtually the entire increment of 347 will have to be provided for by new programs. At least two new departments will be needed. In the choice of institutions, preference should be given to those having, or proposing to have, programs in architecture and/or urban design; the presence of one or more allied design programs will help to support an initially small department and make its success less costly to achieve.

Parenthetically, the dependence of landscape architecture departments on schools of agriculture has ceased to reflect the central thrust of professional concern. Consideration should also be given to the capability of the chosen institution to offer a strong graduate program. Landscape architecture in the U.S. is laggard here in that enrollment is 83 percent undergraduate. In 1967–68, only two departments, at Harvard and the University of Pennsylvania, offered no undergraduate professional degrees. Because of the vast public policy issues in which landscape architects are now being called on to participate, it seems inevitable that professional education for this field will in the future place greater stress on graduate studies.

The estimates for the 1977–78 need in education for *city planning,* while conservative, do require increasing the present capacities *five- or six-fold,* a growth that will be difficult to achieve and that may even in the end prove to be inadequate.

In 1966–67 only one-fourth of planning departments in the U.S. enrolled over forty students, but this is no guide whatever to optimum size since most of these schools are still in their start-up phase. Estimating that in California the growth of existing and newly authorized programs in city planning might provide, at a maximum, for 470 additional students by 1977–78 (or a total of nearly 600), there will remain at least 100 and probably many more students who will need to be taken care of by new programs over the next ten years. The estimate of the 470 is arrived at as follows:

	1967	1977	Increase
UC Berkeley	82	172	90
UC Los Angeles	--	120	120
Fresno SC	--	60	60
CS Poly Pomona	2	82	80
San Diego SC	--	70	70
USC	40	90	50
Totals	124	594	470

These figures are based on the departments' own predictions, except in the case of Pomona where the predicted undergraduate enrollment has been subtracted.

The foregoing analysis, lacking as it must be in precision, suggests that some new programs in city planning will be required over the period in question. The following procedure appears prudent: immediately establish two new programs, pressing them as rapidly as possible to enrollments of at least fifty students each; monitor these at that stage of growth; monitor also the growth in existing programs; and if large unsatisfied demand continues, proceed to establish additional programs at two- and three-year intervals in other appropriate locations.

These new programs should be predominantly in the graduate mode, as this has clearly become the preferred educational structure for the profession. This does not necessarily preclude the approval of a few well-considered undergraduate programs; the demand for personnel in the profession may remain sufficiently intense to justify the attempt to provide for the short-term future an increase in the baccalaureate cadre of planners, but such programs should develop graduate studies as soon as possible.

The discussion relating to city planning concerns only the programs that have a specific professional focus, that aspire to prepare personnel for jobs that require particular professional skills, and that seek recognition as such from the professional societies in planning. It is certainly desirable that in addition to the

above, various institutions in the University and State College systems continue to propose undergraduate concentrations and graduate study programs in allied areas such as "urban studies," "urban affairs," and "urban design," whether under the aegis of the social science disciplines or the design professions. The opportunities for field applications of such studies are rapidly expanding, but each proposal for a program should be considered separately, in the light of demonstrated student demand and demonstrated capability of the institution to furnish the optimum supporting environmental conditions. These are rapidly developing areas in which new innovative approaches can have important payoffs.

It is important to note that this analysis of needs in professional education deals with programs that extend into at least two years of graduate studies. With few exceptions, all programs that are terminal with baccalaureate degrees at four years are coming to be considered either pre- or subprofessional, their continued viability is open to serious question, and their usefulness declining. The five-year undergraduate architecture programs are also proving inadequate. In the "delineation of function" between the various types of institutions it is therefore no longer tenable to say that State Colleges shall not offer graduate work in any of these fields; if they are to deal with them in a professional manner, they must do so at the level of the master's degree.

It is less easy to be categorical about the clearly vocational programs at the two-year community colleges. On the basis of available data, the present survey is helpless to estimate the real need for personnel so trained, or to evaluate the effectiveness of the many extant programs to fill this need. This item should be included in a special study of the training of professional technicians.

The major conclusion of this chapter is that each of the three professions will in the next ten years need at least two new programs in California institutions. To assure continued professional recognition these programs, and the existing ones as well, should confer professional degrees only after two or more years of graduate study; they will also offer appropriate preprofessional degrees. In addition, other programs in fields allied to environmental design reflect growing public interest and should be encouraged where resources permit.

CHAPTER VIII

Findings and Recommendations

1. Program Length

To meet professional standards, to provide general education, and to permit interprofessional study and research, professional programs in environmental design should extend into the graduate school; B.A. and B.S. programs should be presented as preprofessional majors.

2. Need for New Programs

Planned expansion of existing professional programs will not satisfy the need for growth during the coming decade. The need for additional programs at other institutions is on the order of two departments each in the three areas: architecture, landscape architecture, and city planning. In addition, there is a demand for programs in urban studies to provide interdisciplinary collaboration on a wide range of urban problems.

3. Role of Independent Institutions

Only two independent institutions are involved. The University of Southern California makes an important though numerically small contribution in architecture and in city planning, but it cannot expand these programs to meet population growth. Stanford University's role is numerically even smaller; if it would commit the necessary resources it unquestionably could make an important qualitative contribution in these fields, but even a greatly fortified program at Stanford would remain small as a portion of the total need of the residents of the State.

4. Role of the University of California

The University demonstrates deliberate and careful planning for new programs, with concern for innovation and for execellence rather than for how many can be served. These are valuable qualities, but they exact a price. The price is that the University must now share the responsibility for professional education with the State Colleges, even in those areas requiring graduate studies. More students wish to enter the environmental design professions than can be accommodated in the program proposals of the University. It is taken for granted that the University will continue to attract the type of student who is academically profiicient, interested in a wide range of knowledge, capable of profiting from intellectual contact with other disciplines, and eager to do advanced independant work. University departments should be prepared to examine future professional roles and to innovate curricula for these roles. They should engage in research.

5. Role of the California State Colleges

When institutions grow beyond a critical age and size they become subject to strong pressures to diversify their programs to meet the multiple desires of students and faculty. They tend to lose particularity and to become both hard and soft, professional and academic, vocational and humanistic. Something of this process is working to warp the State Colleges toward the multi-university model. As our society becomes more urban and more complex, unbalanced specialization becomes less compelling as an approach. But there remains a clear residual difference between the State Colleges and the University. State Colleges are more responsive to local demands, as expressed in terms of student pressures and local shortages of trained personnel. They are more receptive to the type of student who has already chosen his career and who wishes early professional involvement; to the type who has begun specialized studies in a Community College, and who seeks transfer; and to the type who is already professionally employed and can only study part time. They must now find ways to retain as many as possible of their students through the length of studies recognized as professionally qualifying; this will generally result in the award of a master's degree.

6. Challenge to the State Colleges

Allocation of resources within the State College system seems to be extraordinarily dependent on the relative popularity of existing programs; in consequence there is a dearth of "swing" money with which one might develop significant new programs and institutionalize them at a scale adequate to achieve initial viability. All of the new programs proposed in environmental design betray a lack of confidence in the amount of support that will be available for innovation.

This report has emphasized that the State Colleges must develop graduate studies in order to achieve professional recognition. Only in the social sciences in the city-based colleges does graduate work seem to be anything but grossly underdeveloped. The State Colleges will also need to achieve a more favorable faculty-student ratio for graduate studies. In the professional areas of environmental design, teaching loads loose enough to allow some external professional activity are essential for faculty development.

7. Amending the Donahoe Act

In view of the current trends in professional education and the need to increase the role of the State Colleges, Section 22606 of the Donahoe Act should be amended. This section provides that "the primary function of the State Colleges is the provision of instruction for undergraduate students and graduate students, through the master's degree, in the liberal arts and sciences, in applied fields and in the professions, including the teaching profession. . . ." A clause or sentence should be inserted reading: "The State Colleges may offer the master's degree in architecture as a first professional degree."

8. Varied Emphasis in the State Colleges

Historical accident in the separate development of the several California State Colleges has led to sharp differences of emphasis at the different campuses. The two colleges most interested in design of the environment (San Luis Obispo and Pomona) are strong in engineering but much less developed in the creative arts, the humanities, and the social sciences. Those most interested in city planning (Los Angeles, Long Beach, Fresno, San Diego, San Francisco, San Jose) while strong in humanities and social sciences, are not uniformly developed in engineering and have no background in architecture or landscape architecture. The environmental design professions will be increasingly dependent on the capacity for mutual reinforcement afforded by concentrations of strength in all these areas. It is difficult to identify in the State College system any single institution well equipped to nurture the entire cluster of environmental design professions, especially when these are to be pursued as graduate studies.

9. Location Criteria

The choice of institutions most capable of achieving successful initiation of new programs should be governed by the criteria listed below. Relative importance of the criteria are given for the several fields in the columns at the right of the table.

Variations in the relative importance of these criteria are value judgments of the author. Some of them may need explanation. Landscape schools will be few in number, and concerned students cannot expect to find one near at hand. Architecture has greatest need for institutional elbow room because enrollment is usually largest. Urban studies requires least increase in resources commitment because it typically represents a reorientation of interest on the part of existing faculty.

10. New Programs at the University of California

In the environmental design professions Berkeley will remain larger than Los Angeles although the latter is centered on a larger population. It would be most

Table 5

Location Criteria

	Architecture	Landscape Arch.	City Planning	Urban Studies
(a) new geographical coverage of a thickly-settled region	**	**	**	**
(b) near large concentrations of students who need the program	**	*	**	***
(c) near practicing professionals	***	***	***	*
(d) near urban field study materials	**	**	***	***
(e) prospect for continued growth of institution	***	**	**	*
(f) prospect for allocation of substantial resources	***	**	**	*
(g) existing capacity for scholarly research	**	**	***	**
(h) strength in social sciences and liberal academic disciplines	**	**	***	***
(i) strength in design skills and technological applications	***	***	**	*
(j) allied environmental design program already existing or proposed	**	***	*	

desirable if Stanford were to develop its program, to the scale say of that at USC, so that Berkeley might have an important neighbor in a private institution, as has UCLA; but even if this does not occur, there is no immediate need for another University program in the north. The southern campuses should provide the new growth.

Three campuses of the University are in excellent position to start new programs. *Santa Barbara* is southern, but not remotely so; its distance from Los Angeles may be a slight disadvantage for criteria (c) and (d). Although the campus is growing rapidly, it already has sufficient mass to give support from many quarters. The city has a history of interest in architectural design. *Irvine* is exceedingly well located both as to present population and growth. It is still so new that there might be difficulty in mounting a program of adequate size within a few years, and it may be that other sectors of the campus need to be established before high priority could be given to specialized professional studies. The circumstances of the creation of the Irvine community would make particularly appropriate the installation here of studies in environmental design. *San Diego* has strong locational appeal in meeting criterion (a). In terms of present campus development its situation is similar to that of Irvine and might have similar impediments to rapid action at a sufficient scale. It is not known how or when an advanced professional school of 300–600 enrollment would best fit in the scheme of small colleges adopted at this campus. *Riverside* is another possible campus, but its claims for an architecture program seem less persuasive in the light of the proposed criteria.

Two University campuses show interest in establishing new programs in landscape architecture. *Santa Barbara's* proposal fits with its plans for architecture

and city planning. Considering criterion (j) as important for landscape architecture, the proposal has merit in the context of a new College of Architecture and City and Regional Planning. The proposal from *Santa Cruz* is perhaps influenced by the interesting ecological setting of this new campus, but it is unaccompanied by any proposal for the other environmental design fields and in addition is not well situated to meet criterion (a).

Except for UCLA, whose planning curriculum should certainly be implemented in spite of criterion (e), the only new programs in city planning proposed in the University are put forward for *Irvine, Santa Barbara,* and *San Diego,* in connection with their proposals for new Schools or Colleges of Architecture and City, Regional, or Environmental Planning. These proposals for the larger package, in institutions with ample room for growth, have merit but are probably not all needed in the near future. For all the reasons discussed, plus the fact that the campus has already submitted a serious proposal, Santa Barbara stands out as the preferred location for the next University campus to offer programs in environmental design. Its proposal, or a similar one, should be put into effect as soon as possible.

11. New Programs in the State Colleges

The program at *Fresno* SC for the M.C.R.P. promises to recruit from and interact with a region that will probably not otherwise have a professional planning school in its midst. In California two great metropolitan agglomerations dominate; within or near them are clustered the outstanding institutions of higher education as well as the State's greatest range of urban planning problems. Fresno is outside these complexes, and although the planning problems of the San Joaquin Valley and similar regions are very real, this city would not have a high priority as a place to locate a center of planning education. Yet, if California is soon to have as many as eight professional planning schools, it may be desirable that one of these be in central California. Recruitment to its faculty of professional planners has proved feasible. The college has room for growth, but its capacities for graduate studies and research are relatively undeveloped. Support from related disciplines appears strongest in geography, business administration, and political science. Art and engineering are available, but their capacity to aid the program is not evident. No other environmental design profession is represented. Library resources will need improvement.

Since it exists, the program should continue, to be reassessed when it becomes clear whether the establishment of other new programs will deprive Fresno of an adequate enrollment.

CSC *Long Beach* has a proposal for the M.A. in City and Regional Planning, described in Chapter VI, which seems to lack commitment of new resources. The college should be invited to propose a program with a more serious professional involvement, or persuaded to convert the proposal to one of urban studies, or discouraged from proceeding. This college apparently had an earlier proposal for a program in architecture which has now been abandoned. Perhaps if these two proposals could be combined, a more convincingly professional case could be presented.

CSC *Los Angeles* proposes a program for the degree B.A.C.R.P., described in some detail in Chapter VI. This appears to be an excellent program, more substantial than the one proposed at Long Beach, but it is undergraduate only and its emphasis accords better with the designation "urban studies." A conversion to that designation is recommended, acknowledging that this project may soon develop into a more professionally focussed one.

Among the State Colleges only CS Poly *Pomona* is now proposing a new program in architecture. Pomona meets many architecture criteria rather well. It is deficient when it comes to criteria (g) and (h), but overcoming these particular deficiencies is a high priority objective of the college's administration. The sponsoring department has a small but enthusiastic staff and there is clearly a supply of interested students. Effectiveness of a new program would depend heavily on concurrent rapid growth of the resources of criteria (g) and (h), on the establishment of School status under strong leadership, and on a commitment for allocation of substantial resources (f). Alternate futures for Pomona have been suggested in Chapter VI.

Pomona already offers the B.S.U.P. and now proposes also to offer the Master in Urban Planning; this is hedged with the caveats already developed in Chapter VI and referred to in the previous paragraph, except that criteria (g) and (h) are more critical for planning than for architecture. Pomona will need ultimately to develop graduate programs in all three of the environmental design professions, but its capacity to do this effectively needs improvement.

San Diego SC is in the start-up phase of its program for the M.C.P., which meets very well criteria (a) (b) (c) (d) (e) and (h). The college appears to have a diversified Graduate Division, and if sufficient resources can be allocated to urban planning, the program should succeed. The character of the curricula in urban studies is not yet clear.

San Fernando Valley SC desires to inaugurate a professional program in planning and may be well equipped to do so, but the need for an additional program in the Los Angeles area is doubtful, and the

college would be better advised to concentrate on its interdepartmental work in urban studies.

San Francisco SC proposes to strengthen its existing undergraduate urban studies program by the establishment of a department and by instituting a graduate degree. As the most convincing example of the worth of such studies, the program deserves support.

San Jose SC proposes to create a new Department of Urban Planning with several professional faculty members and to become involved with the problems facing the many planning agencies of the municipalities of the Bay Region. This program has a good chance of early success, and it will innovate by introducing city planning in a new kind of institutional environment.

CS Poly *San Luis Obispo* proposes to add landscape architecture as part of a plan for the elaboration of career choices in its School of Architecture. Considering the resources already available in that School, the proposal is probably valid, along with the plan to inaugurate a program in construction engineering and to continue architectural engineering.

San Luis Obispo also awards the B.S.C.R.P. and now proposes a program for the M.C.R.P. As explained in Chapter VI, the college is not compelling with respect to criteria (a)(b)(c)(d)(g) and (h). Only some of these disadvantages will be overcome by the further development of advanced studies in other sectors of the college. On the other hand the School of Architecture already has a large faculty and is on the way to becoming a major center that includes several branches of architecture. Clearly its further development should also include specialization in the aspects of design related to the urban scale. It may be that such a large center could, by careful recruitment, provide on its own faculty a sufficient number of scholars trained in the social sciences to meet the educational needs of professional planners.

Under present conditions, however, it is recommended that the proposed specializations be designated as "urban design" or "community design," reserving for a later time the decision regarding a graduate program in city and regional planning. Meanwhile the professional status of the school will be strengthened by the development of graduate programs in the other areas in which it is competent.

Summarizing for the State Colleges, Fresno SC, San Diego SC, and San Jose SC appear to have programs and circumstances appropriate to their new or proposed professional studies in planning. San Francisco SC appears to have the best prototype for concentrations in urban studies and should be encouraged to further development. CSC Long Beach, CSC Los Angeles, and San Fernando Valley SC should restrict their curricula to the broad field of urban studies. CS Poly Pomona should be encouraged to develop its program in architecture (its proposal is the only present hope for an additional program in architecture in the State Colleges), but its extension of all three environmental design professions into graduate studies should be viewed with caution pending further developments in the college as a whole. Finally CS Poly SL Obispo is embarked on a desirable diversification of environmental design fields and should establish a program in landscape architecture, but should identify its urban specializations as "urban design" or "community design" until further demonstration that the college is capable of offering broad professional studies in city planning in spite of a disadvantageous geographic location for such programs.

12. Urban Studies

Findings and recommendations regarding urban studies and the proposals to redefine putative city planning programs as urban studies (so far exclusively a State College phenomenon) require an explanation. It is possible that the city planning profession is in process of dissolution in the face of impossible demands; that it will reappear as several different professions of applied design and applied social science. But this report assumes that the profession will not dissolve, that it will preserve identity while incorporating wider frames of reference (see Chapter II). Meanwhile many other professions and disciplines will redirect their orientations toward urban problems. These problems are too universal to be the concern of any one profession.

Following this assumption there are many kinds of careers to be brought to bear on the urban condition that are not part of the AIP. For example, an undergraduate program in urban studies may serve two very significant purposes. It may provide a B.A. graduate with a superior perspective for employment at tasks hitherto staffed by majors in history, sociology, or mathematics, and it may prepare others for specialized graduate studies in many professions of urban applicability, including city planning.

Urban studies programs developing at CSC Long Beach, CSC Los Angeles, San Diego SC, and particularly the one now being departmentalized at San Francisco SC, are breaking new ground in higher education and will set patterns that will be emulated elsewhere. The fact that design is not emphasized in these programs is not relevant outside the AIP identification.

Similarly, urban design concentrations within architecture programs fill a real and pressing need, extending design skills to the urban scale, and are well worth doing even at institutions not yet well equipped to offer professional programs in city planning.

13. Role of the California Community Colleges

The issues posed by the programs in the Community Colleges are very troublesome, and they should be the subject of a separate study sponsored by CCHE. This study should not be limited to the environmental design professions, but should include all subject areas where there is evident ambiguity in the relation of vocational studies to professional career development.

The study cannot be the work of a single consultant. It should be designed as a group effort, a commission involving both educators and professionals. The effort should include the preparation of data by research staff and the presentation of views from other informed sources, followed by a report to which all members should contribute.

The purpose should be to establish principles having sufficient generality to guide curricular innovation for many paraprofessional roles. California is so far along already in this field that such a study would have great national influence.

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Questionnaire to Existing Professional Programs

Environmental Design in California

A Study for the Coordinating Council for Higher Education

1. Name of University or College_____
   a. Date of establishment _____
   b. Total enrollment _____
   c. Name of department or budgetary unit concerned _____
   d. This return compiled by_____

2. Programs

   Outline or diagram degree structure, indicating for multiple programs which ones are sequential, which in parallel, and nominal years required to complete each program.

   For each degree program in one of the environmental design professions give:

   a. Name of degree _____
   b. Date of its inception _____
   c. Estimated degrees conferred to date_____
   d. Degrees conferred in 1967–68 _____
   e. Total enrollment (all years) of candidates in 1967–68_____
   f. New candidates admitted in 1967–68
      as freshmen _____
      from preprofessional program in your institution _____
      from other program in your institution _____
      from another institution _____
      total _____
   g. Candidates enrolled in 1966–67 who did not return in 1967–68 and who were not graduated _____

   (In reporting on items 2d, 2e, 2f and 2g, if 1967–68 number is abnormal, give instead average of last three years and so indicate.)

   h. Academic status required of candidates who begin degree program (i.e. high school diploma, 2 years college-work, etc.) _____
      _____
   i. Indicate what agency controls admission to program, its selection criteria, and percentage of applicants admitted in 1967–68.

_____
_____

   j. Evaluate significance of California Community Colleges as feeder schools to your degree program. Is their role increasing?_____
      _____
   k. What approximate percentage of total enrollment is in the following categories:
      Out-of-state residents _____
      Foreign citizens _____
   l. 1967–68 total financial aid to students:
      Scholarships _____
      Loans _____
      Teaching and research assistantships _____

3. Costs
   a. 1967–68 total operating budget of department or budgetary unit _____
   b. 1967–68 budget for teaching salaries only _____
      (Exclude employee benefits. If your institution does not charge faculty research time against extramural research funds, discount total salaries so as to exclude non-teaching reimbursement)
   c. 1967–68 research volume, including faculty salaries (or three-year average) _____
   d. Using 3b as a base, estimate percent your faculty's effort expended on teaching students not in your department's degree programs _____
   e. Based on your curricula, estimate percent of studies by students enrolled in your programs taught by teachers on other budgets _____
   f. Total students majoring in your department or budgetary unit _____
   g. Total faculty in your department or budgetary unit (use equivalent full-time to report both students and faculty) _____

h. If there is more than one degree program in your department or budgetary unit, do you have any way to apportion relative costs? _____

_____

i. Total gross sq. ft. of space presently assigned to your department (exclude library) _____

j. Considering the resources available, do you consider your department to be operating at optimum capacity now? _____

If not, at what percent of optimum? _____

4. Trends

Year	*Total Enrollment*	*Degrees Conferred*	*E.F.T. Faculty*	*Total Budget*
1957–58	_____	_____	_____	_____
1959–60	_____	_____	_____	_____
1961–62	_____	_____	_____	_____
1963–64	_____	_____	_____	_____
1965–66	_____	_____	_____	_____
1967–68	_____	_____	_____	_____
1969–70 est.	_____	_____	_____	_____
1971–72 est.	_____	_____	_____	_____
1973–74 est.	_____	_____	_____	_____
1975–76 est.	_____	_____	_____	_____
1977–78 est.	_____	_____	_____	_____

(If more than one degree program is included in the above, give enrollment and degrees conferred for each.)

5. Comparisons

As compared to other departments in the same field throughout the U.S., estimate with a check mark your department's status in the following categories:

	Low	*Medium*	*High*
a. Aptitude and motivation of students	_____	_____	_____
b. Distinction of faculty	_____	_____	_____
c. Resources per student	_____	_____	_____
d. Admissions selectivity	_____	_____	_____
e. Attrition rate	_____	_____	_____
f. Short-term employability of graduates	_____	_____	_____
g. Long-term achievement of graduates	_____	_____	_____

(Your opinion will not be incorporated as such in my report.)

6. Changes

Describe briefly any significant structural or policy change in your program that has occurred in the last five years or that you regard as imminent.

_____

_____

7. Remarks

Supply any statement you think will help evaluate your department's programs or the present state and future needs of environmental design education in California.

_____

_____

Questionnaire to California Community College Programs

Environmental Design in California

A Study for the Coordinating Council for Higher Education

This questionnaire is addressed to:
in reference to its program in:

1. The College
   a. Date of establishment _____
   b. Enrollment in 1967–68 full-time _____
      part-time _____
      total _____
   c. New students admitted 1967–68 _____
   d. Students completing two-year full-time (or equivalent) programs in 1967–68 _____
   e. This return compiled by _____

2. The Program referred to above
   a. Date of its establishment _____
   b. Enrollment in 1967–68 full-time _____
      part-time _____
      total _____
   c. Students completing two-year full-time (or equivalent) program in 1967–68 _____
   d. Objectives of program, i.e., what percent of effort in each of the following:
      I. preparation for transfer to professional school _____

II. preparation for immediate employment _____

III. community service or adult education _____

e. In this two-year curriculum, what proportion of total study consists of subjects peculiar to it _____

f. List the headings of these subjects:

_____ _____

_____ _____

_____ _____

g. These subjects are taught by how many faculty _____

h. Present rate of enrollment growth, average total students increase per year for last five years _____

i. What total enrollment in this program do you expect by 1978 _____

j. What data do you have on further education or type of employment of graduates of this program

_____

_____

_____

k. Estimate your success in this program in: (excellent, satisfactory, or inadequate)

I. student counseling _____

II. curriculum development _____

III. staffing _____

IV. placement _____

l. What percentage of your entering students in this program do not have a high school diploma _____

What can you say of their performance in your program _____

_____

_____

m. Do you contemplate changes in program? If so, describe: _____

_____

_____

n. Please supply any additional comment on the status of this program and its contribution to higher education in California.

(no p.5

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